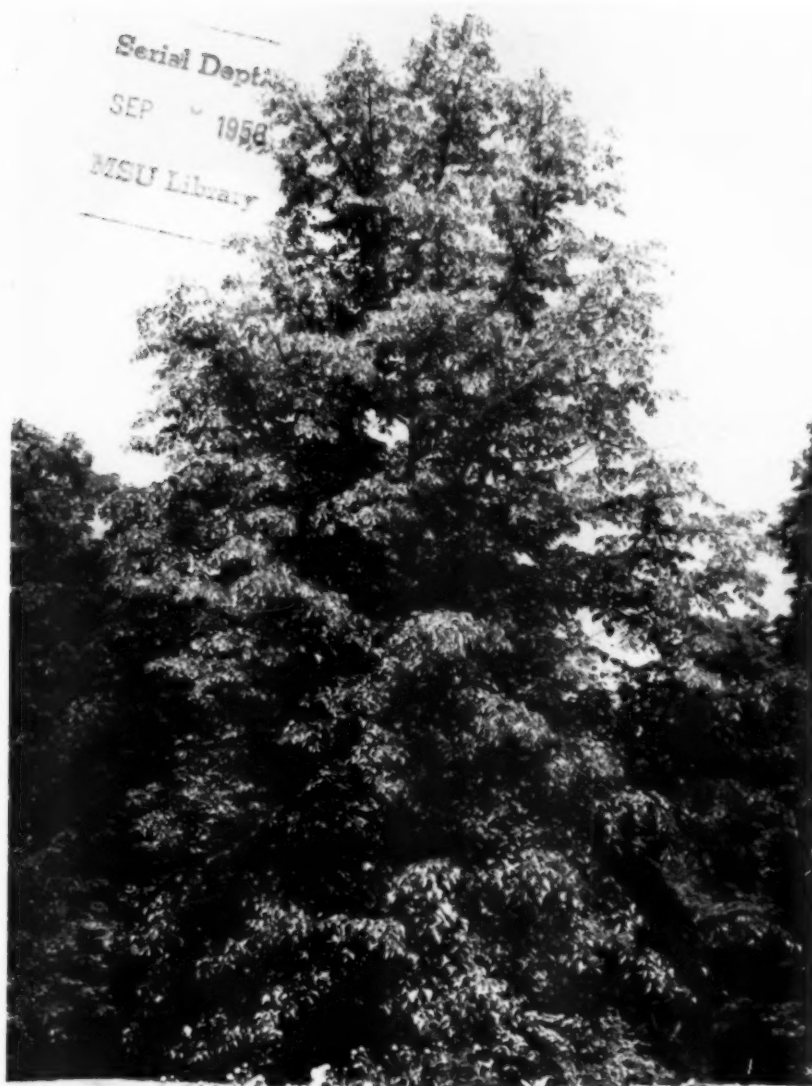


AMERICAN NURSEYMAN

The Nurseryman's Forte: To Make America More Beautiful and Fruitful

SEPTEMBER 15, 1958



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The Nurseryman's Forte: To Make America More Beautiful and Fruitful

VOL. CVIII, NO. 6

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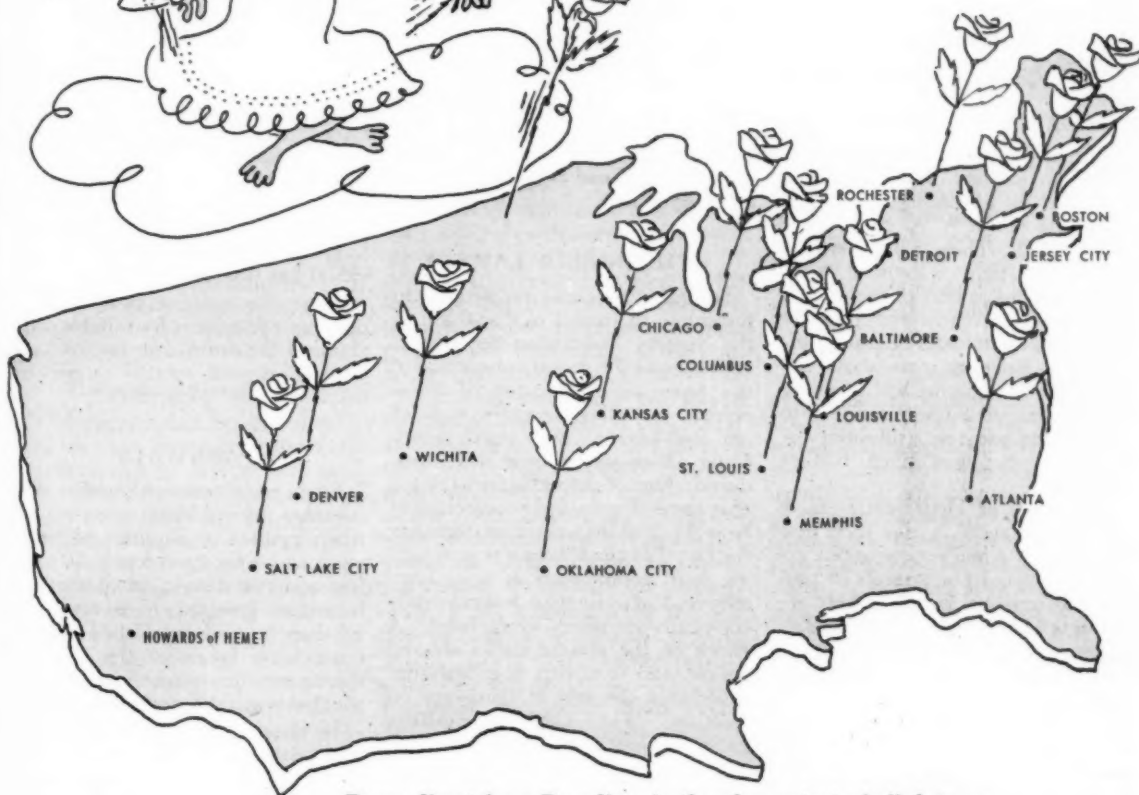
Forms for the October 1 issue will close Friday, September 12.

Forms for the October 15 issue will close Friday, September 26. Mail copy to arrive at Chicago by these dates—no later!



HEAVENLY ROSES

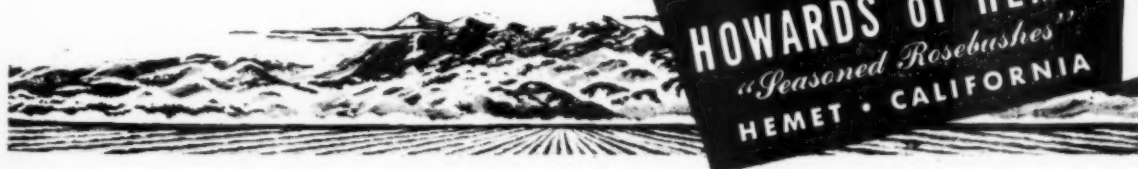
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"Seasoned Rosebushes" for the wholesale trade exclusively



AMERICAN NURSERYMAN

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C. A. BRADY, Jr.
Advertising Manager

Editorial

GARDEN CENTERS

Most interesting and informative, aside from matters of business, was the session for garden center operators at the recent A. A. N. convention at Dallas. Those who missed it will affirm that statement after reading the full report of the session in the issue of August 15. Not only were the garden center operators interested in learning more about the techniques of their method of doing business, but their organization into a continuing body, as a subsidiary of the A. A. N., was given further attention.

The main problem which faces such organization is the fact that some of this trade's associations require members to be growers or producers of nursery stock. Others accept retail nurserymen even if they do not produce their own stock.

As a matter of fact, an organization of garden center operators in this field should embrace those who are primarily retail nurserymen. The purpose of this industry is to produce and market nursery stock.

For a long time retail nurserymen gradually have added garden equipment and supplies to their merchandise, at least seasonally. With the recent home-building boom and the boom in nursery sales, the number of retail outlets in this field has expanded, some being undertaken by experienced nursery personnel and others by persons untrained altogether or experienced only in allied lines. One result is a widely varying policy as to the proportion of nursery stock and garden equipment or supplies which are handled. Some of the newcomers to the field call their establishments garden centers or stores when they are little, if anything, more than hardware stores with a leaning in the stock in trade to the garden lines. Hence it will be difficult to formulate a definition of a garden center operator which is widely inclusive and will not, indeed,

take in what is really a hardware store.

Yet there is no purpose in making the definition so inclusive, for it may put the cart before the horse. As may be seen by those who have been participants and committee members in the movement toward a garden center operators' organization, the most important members of such an organization would be the individuals or firms interested, first of all, in the retail marketing and distribution of nursery stock. If this is borne in mind, the definition of a garden center operator may not be easy, but it can be determined as a desirable one for this industry.

CHECK BLUE LAWS

During a preparatory meeting to formulate the topics of discussion at the Nursery Association Secretaries' gathering at the recent convention of the American Association of Nurserymen at Dallas, Tex., the topic of old and buried "blue laws" which could afflict nurserymen was introduced. One of the secretaries related that hardware dealers in a section of New York state were irritated over the fact that garden centers were selling hard goods, such as hose, lawn mowers and so forth on Sunday while the hardware stores were closed. A check of the statute books showed an old and forgotten blue law that prohibited the sale of hardware on Sunday. The hardware dealers promptly had this law enforced.

To forestall any unpleasant situations, it might be well for legislative committees or appointed individuals of state nurserymen's associations to check the old and buried blue laws on the records of their respective states.

CLOSING-OUT SALES

Evidently nurserymen in various parts of the country face the perennial problem of price competition in the form of "closing-out sales" and special offers because of "going out of business" or "quitting for the season." It is usually difficult to take any action to be certain that these sales are bona fide, for no federal or state laws apply to such sales. But the California Association of Nurserymen has given attention to the complaints of members about such sales and, in the course of its investigation, has found that some counties, cities or towns have ordinances

The Mirror of the Trade

which govern them. So far as California is concerned, it is reported, these ordinances have certain similarities which indicate that the problem is one general to various places and industries, so that the local lawmakers have given it attention.

It would therefore seem a wise precaution, in a locality where such sales have bothered nurserymen, to inquire of the authorities whether such an ordinance exists. The city or county clerk, or the police authorities, should be able to give enlightenment and to indicate just what are the provisions of the ordinance if there is one in a given locality. If a license is required before such a sale is advertised, then the next step is to ascertain whether the offending individual has procured a license.

As in the case of peddlers, this problem can be met by suitable local action if the ordinances involved are understood and suitable steps are taken with the authorities.

PARKWAYS

Every nurseryman is familiar with stretches of parkway trees which, when planted as saplings 25 or 50 years ago, were spaced only 10 or 20 feet apart and now, when they are in mature growth, are overcrowded, misshapen, undernourished and in other ways far from the beautiful specimens they might have been if planted a suitable distance apart.

In spite of their poor appearance and other detractions, no one seems to have had the good judgment or courage to remove the alternate trees at some period of their growth.

With these examples before us, it would seem unlikely that the same mistake would be repeated. Yet it is possible now to see parkways in newly built areas where sapling trees again are being planted too closely together.

Most cases of such planting may be ascribed to private owners or subdividers, no doubt, for one cannot believe an experienced professional is responsible for such error. But nurserymen or arborists might offer the benefit of their advice to such planters and attempt to avoid some of the mistakes in parkway tree planting made by a previous generation.

CHANGING its name recently, Ludlow's Spray Service became Ludlow's Garden Center, Mobile, Ala.

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Hold Michigan Management Conference

By Donald VanderVeen, Jr.

The 12th annual nursery and landscape management conference was held August 12 and 13 in the auditorium of Kellogg Center, Michigan State University, East Lansing. Over 200 members of the landscape industry and their wives attended the affair, which was sponsored by the department of horticulture of M. S. U. and the Michigan Association of Nurserymen.

A welcome was extended to the group by Dr. Fred B. Widmoyer at the official opening of the conference. Dr. Widmoyer urged the members to visit the planting displays and other points of interest on the campus during their stay. The department of horticulture is at the service of the nursery industry and welcomes suggestions as to ways they can be of further service to the group, he stated.

Discusses Advertising

Dr. Widmoyer then presented William Haight, a member of the staff of communication arts at the university, who discussed the subject "Sales Promotion Through Advertising." Mr. Haight, outlining some of the reasons for advertising, cited building reputation, creating customers, increasing net profit and stabilizing seasonal volume.

Consistent advertising is a must, he pointed out. It will create an image of the advertiser's firm in the subconscious mind of readers, so that when they are ready to buy, that firm will be fixed in their minds. It is necessary that buyers know what a nurseryman has to offer before they can consider him to fill their need.

Mr. Haight stated that advertising will not sell unwanted merchandise nor will it be effective if used only spasmodically. Advertising must be consistent for a cumulative effect and it must be timed to reach the buyer when he is in a buying mood or when he realizes the need for a certain product.

The advertising budget should be established and should pay its own way, he asserted. The amount can vary greatly and will depend upon such factors as age of the business, its size, the location, the competition, business conditions and experience. An advertising program can be directed at varying classes of the public. The prestige of a business can be increased by advertising expensive or unusual items. Promo-

tional items are those that show the greatest profit or those that will increase traffic.

First Step in Campaign

Mr. Haight suggested that the first step in an advertising program is to determine what market and clientele one wishes to cultivate. Good, consistent advertising should then be directed toward that market and clientele. If the advertising budget is low, it is best to concentrate on one advertising medium. With more resources, one can spread out his program.

Mr. Haight closed his remarks by comparing the advantages of various advertising media. Newspapers, he explained, give wide coverage for low cost and they are considered a friendly type of advertising, as they do not force themselves on the public. Several items can be featured in one ad, and they may be clipped for future reference. A particular audience can be reached through radio by the right choice of program material. The buyer receives the message with little or no outside interference. Only one or two items should be used, to gain maximum retention in the mind of the listener.

Dr. J. W. Thompson, of the college of business and public service, M. S. U., delivered a humorous discourse to the group on "Training Personnel on Direct Sales." Dr. Thompson emphasized the value of

using customer emotions in making sales. Customers, he stated, can be divided into several groups, including the penny pincher, the budget-minded and the quality-minded.

Approaches should be studied by salespersons, and then the sales effort can be directed along the lines that will prove most effective. Never take any client for granted, Dr. Thompson warned; making him feel that you really like him is the first step in making a sale.

The nursery industry, the speaker stated, is lax in using techniques that have been developed in other fields to promote business and increase sales. Quality selling is the only kind of selling that will create satisfaction and build a foundation for a lasting business, he concluded.

Tax Points Explained

Dr. Harold Davidson, department of ornamental horticulture, M. S. U., acted as chairman of the afternoon session. He introduced Charles Brushaber, internal revenue district agent, who advised the conference of the tax advantages of a nursery operation's being classed as agriculture. To qualify for the agricultural rating, a business must derive two thirds of its income from agricultural pursuits, he explained. Good business records are highly important and should be retained for five years. Mr. Brushaber ended his talk by discussing various methods of figuring depreciation and explaining deductible and nondeductible items for income tax purposes.

Mr. Brushaber was followed on the program by Wendell W. Law, a field representative for the department of health, education and welfare of the social security administration at Lansing. Mr. Law presented a film on the development of social security and then threw the session open for questions.

Mr. Law informed the group that the members would qualify under the act whether they had one or many employees. The cost of social security will be rising in the future, he asserted, reaching 6 3/4 per cent by 1975 for self-employed persons. The rate is 3 3/4 per cent at present. Social security has a great influence on our economy, he stated, as over \$500,000,000 is paid out each month.

Dr. Davidson introduced Nicholas L. Jurick to complete the afternoon's program. Mr. Jurick is associated



John Emerson, Emerson Landscape, East Lansing, Mich., right, examines a bonsai specimen with Robert Maxson, Grand Ledge, Mich., who discussed bonsai growing at the Michigan landscape conference held at East Lansing.



Joseph Roesch, of the Long Island Agricultural and Technical Institute, Farmingdale, L. I., N. Y., demonstrates a pictorial aid for developing landscape sales at recent Michigan conference.

with the Michigan employment security commission, Lansing, and he discussed the "Supervisor-Employer Determination Unit." A question and answer period brought out several points of interest.

Mr. Jurick stated that, to qualify under the program, one must have four or more employees working for a period of 20 weeks during the year in nonagricultural lines. If an employee works only one hour during the week, that week counts toward the total, he pointed out.

The determination of what types of work are considered nonagricultural has never been fully defined by law, according to Mr. Jurick. There has never been a true test case in Michigan in this matter.

The annual chicken barbecue was held on the banks of the Red Cedar river before the members were called for the start of the evening session under the chairmanship of Richard Nuttall, of the department of horticulture, M. S. U.

Bonsai Culture

Mr. Nuttall introduced Robert Maxson, Grand Ledge, Mich., who presented an outstanding program on the "Culture of Bonsai." The meaning of the word "bonsai," Mr. Maxson explained, is the culture of plants in pots. A true bonsai subject is an exact duplicate in miniature of a plant growing naturally. The purpose of the technique is not to grow distorted plants, but rather to grow healthy, attractive plants which can be used in restricted areas. Mr. Maxson believes that there is a great future for this product; some of the western nurseries are receiving so many requests for bonsai materials that they are unable to fill them.

Materials grown by this method

are divided into four classes, according to size. Mame-bonsai is the smallest, being under six inches. Ko-bonsai, with finished materials ranging from six to 12 inches, is the most popular class, closely followed by chiu-bonsai, with sizes up to 24 inches. The fourth class is dai-bonsai, with finished materials growing above two feet in height.

Most plants can be grown by this method and produce good results. A few mentioned by Mr. Maxson were the pines, pyracantha, carpinus, azalea, elm, maple, quince and Sargent juniper, the last-named being considered one of the best.

Root Restriction Program

In the development of the plants, the first consideration is the soil, which Mr. Maxson screens carefully after determining the soil requirements of his subject. The seedling is first placed in a large pot, where it is watered regularly and fertilized monthly until the plant reaches the final size desired. At this time the plant is transplanted into a smaller pot and it is this restriction of the root system that dwarfs the plant, not starvation, Mr. Maxson pointed out. It is desirable to repot the specimen every few years, cut back

the root system and add new soil to maintain the vigor of the plant, he asserted. Special protection is required in winter, as freezing may break the pots. Mr. Maxson uses porous clay pots, glazed on the outside only, and places them in an area where the temperature will not fall below 32 degrees Fahrenheit in the winter months.

Culture is an important part of growing bonsai, he stated, but artistic ability is also an important consideration. The finished plant must be in proper relationship to the size of pot in which it is grown. Shaping and pruning must be well handled during the growing period, to insure pleasing results. Finished bonsai specimens range in price from \$25 to \$600, depending upon their appearance. Nurserymen have ideal sources of bonsai material right in their own fields. Pick plants that are naturally dwarfed and give them a try, was his advice.

Management Techniques

Harold Hicks, Cottage Gardens, Lansing, Mich., conducted a group discussion on "Techniques of Successful Operations" to conclude the program for the first day. Labeling

[Continued on page 115]

Michigan Tour Visits Canada

By Donald Watson

Sixty-one nurserymen and students left Kellogg Center on the campus at Michigan State University, East Lansing, at 8 o'clock August 14 for a 4-day nursery trip to southern Ontario, Canada. First stop was at the nursery of L. Curtis Ketzler, Flint, Mich. He is operating one of the newest garden stores in the area and successfully combining the operations of a retail florist and a nurseryman.

From there the group crossed the Blue Water bridge into Sarnia, Ont., and went directly to Downham's Nursery, at Strathroy, Ont. The hospitality there was overwhelming. The group was particularly impressed by the thorough cultural practices as they traveled by bus to three different farms that are operated by the firm in the Strathroy area. The wholesale nursery, noted for its golden philadelphus, employs 150 salesmen and ships to all corners of North America.

Early on the morning of August 15, the group left the Hotel London, London, Ont., and traveled to the famed rock garden at the Royal Botanical Gardens, Hamilton, Ont.

This national garden, started in 1929 and completed in 1932, includes beautiful sunken gardens, botanical collections and trial grounds covering approximately 1,900 acres within the city limits. From there the group traveled along the lake shore to the garden center operated by Sheridan Nurseries, Ltd., near Toronto. The beauty of the center, constructed as a lavish show place, is enhanced by a wide variety of plant materials, especially those used for hedges and espaliers.

View Landscape Work

The following day the group were the guests of the Weall & Cullen Garden Store, North Toronto. After a short opportunity to observe the broken lath shading and the automatic watering system in the sales station, Mr. Cullen took the group through a modern well-planned community to see the landscaping that had been done by his firm. A pleasant picnic followed at Edward's Gardens, on Lawrence avenue, where there are grass plots, rhododendron gardens and a fine parkland on roll-

[Concluded on page 55]

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Washington Meet Presents Plant Panel

By Charles H. Potter

The Washington State Nurserymen's Association held its annual summer convention at the Hotel Monticello, Longview, Wash., August 21 to 23. There were over 100 in attendance. The board of directors held a long session the afternoon of August 21, held another early morning meeting the following day and then followed up with a third gathering on the last day. Principal business with which the board was occupied concerned the raising of the minimum dues and laying the groundwork for hiring an executive secretary.

The summer convention contained enough serious business to make the trip well worth while, but left ample time for pleasure. The first fun on the program came on the evening of August 21, when the group traveled 10 miles from Longview to Crystal park, where the fellowship of a picnic was enjoyed.

The first general business session was held the morning of August 22 and was opened by the vice-president and general convention chairman, John Strander, Strander Evergreen Nurseries, Seattle. Mr. Strander introduced Mayor Clark Lewis of Longview, who warmly welcomed the members of the W. S. N. A. Ralph Peterson, Peterson Landscaping Co., Vancouver, Lewis & Clark chapter president, summed up the local convention program and urged those present to avail themselves of the opportunity to visit the world's largest timber mill, at Longview.

Dues Raised

Bryan Taylor, Taylor Nurseries, Seattle, president of the W. S. N. A., presided over the rest of the meeting. Winsor H. Bond, May Nursery Co., Yakima, was called upon to report the action of the board of directors in regard to the W. S. N. A. dues structure. The board recommended that the minimum dues be raised from \$7.50 to \$22.50 per year and that \$5 of this amount be given to the respective chapters. Further it was recommended that each dues category be raised \$15, with the exception of the associate members' fee. After some discussion from the floor, the dues recommendations were adopted, to take effect January 1, 1959.

President Taylor announced that the 1959 January convention of the W. S. N. A. would be held at Seattle.



Officials at the summer meeting of the Washington State Nurserymen's Association, held at the Hotel Monticello, Longview, Wash.: Left to right, John B. Strander, W. S. N. A. vice-president; L. H. McGuire, director of region VI, American Association of Nurserymen; Mrs. Lenora Walters, retiring secretary of the Washington association, and Bryan Taylor, W. S. N. A. president.

Jack Van Well, Van Well Nursery, Wenatchee, chairman of the advertising and public relations committee, told of the committee's work this past year whereby newspapers throughout the state had been given information periodically concerning the W. S. N. A. and the nursery industry in general. The association publication, Balls and Burlaps, has been mailed periodically to the newspapers.

In connection with the Century Twenty-One Exposition to be held at Seattle in 1961, President Taylor announced that Governor Rosellini had appointed a state beautification committee. Part of the job of this committee, he said, would be to encourage competitive plantings and improvements throughout the state. He declared that not only was it a matter of pride for every nurseryman to participate, but it was also a golden opportunity. He urged nurserymen of the state to make known the whereabouts of large trees which will be needed for plantings.

George Eade, chief nursery inspector of the state of Washington, was the principal speaker at the first business session. He paid tribute to the nurserymen's co-operation with the department of agriculture. Effort is made by the department to contact each nursery in the state at least once a year and make extra calls if requested.

In general, Mr. Eade said, stock is in good shape in the state. With

the digging time at hand soon for deciduous plants, he urged nurserymen to be on the alert for any root problems which they might discover.

Mr. Eade then gave figures showing the activities of nursery inspectors throughout the state. In the year 1955-56, he said, 21,727 packages were inspected; in 1956-57, there were 137,357, and in 1957-58, 135,738. These were all inspections of incoming and outgoing packages.

Nurseries and other places handling nursery stock which were inspected in those years amounted to 2,372 in 1955-56; 2,289 in 1956-57 and 3,418 in 1957-58. More are expected in the 1958-59 year, he added.

In 1955-56 there were 510 bulb field and warehouse inspections made; 477 in 1956-57, and 577 in 1957-58. Concerning the amount of incoming stock rejected, he said there were 158 shipments rejected in 1955-56, 172 in 1956-57 and 179 in 1957-58. He said that the bulb industry of the state is maintaining itself and that the state is still exporting some Wedgwood and a few other iris. Some foreign markets, said Mr. Eade, prefer northwest bulbs. The 1958 crop of bulbs looks good on the average.

Uniform System Plans

He closed his talk with remarks about the proposed uniform system of nursery stock inspection for the western states. Conferences have

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Weed Controls Demonstrated at Massachusetts Field Station Meet

By Robert L. Ticknor



Dr. John Havis, head of the University of Massachusetts field station at Waltham, using a modified Cyclone spreader to apply granular herbicide as Massachusetts nurserymen made a field tour during the twilight program held at the station.

Over 80 Massachusetts nurserymen attended a twilight meeting August 6 at the Waltham field station of the University of Massachusetts, Amherst, to observe work on weed control in nursery stock. Dr. Robert L. Ticknor, associate professor of nursery culture, assisted by Paul F. Bobula, instructor of nursery culture, conducted a tour of the experimental plots and demonstrated application techniques.

After the field tour and demonstration, the group moved to the auditorium to summarize the weed control work and to have questions on insects answered. On hand to answer these questions were Warren Whitcomb, professor of entomology, and Clifford Chater, assistant professor from the shade tree laboratory at the university.

Weed control in *Rhododendron catawbiense roseum elegans* was the first experiment examined. These plots were treated May 20 with the following materials: Eptam at five and 10 pounds per acre; Karmex DW at one-half, one and two pounds per acre; Karmex N at four pounds per acre; Simazine at two and four pounds per acre, and a combination of Alanap-3 and Sesone both at four pounds per acre. None of these materials has produced injury to date. Karmex DW and Simazine-treated plots were still relatively weed free, while plants treated with the other chemicals required retreatment.

Preplanting Treatments

One of the most costly weed control operations is in nursery beds. Weed control 85 to 95 per cent effective in eliminating seedlings has been reached the past three years with methyl bromide, mylone and Vapam

or VPM at the field station. To control the weeds that escape, granular Chloro IPC, as well as mulches of sugar-cane bagasse and bark from the paper industry, were applied to sections of the 5x10-foot beds that had been treated with the chemicals. Sugar-cane bagasse proved effective in controlling the weeds. Less effective but beneficial were granular Chloro IPC and bark.

Methyl bromide appears to be the most effective commercially available

herbicide, but is somewhat difficult to apply. Vapam and mylone are about equally effective as herbicides, but a longer period for the breakdown of mylone is necessary before planting operations begin.

Granular eptam at 10 or 20 pounds per acre on attaclay or vermiculite proved to be the most effective preplanting herbicide this year. The dry chemical was rototilled into the soil to a depth of five inches, but

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Massachusetts Summer Meeting

By John C. Dwyer

Wednesday, August 13, the Massachusetts Nurserymen's Association held its 49th annual summer meeting. Weston Nurseries, Inc., Hopkinton, Mass., operated by the father-and-son team of Peter and Edmund Mezzitt, was the host nursery for this traditionally festive event. Over 60 member firms and their key employees swelled the attendance to more than 170—a near record.

Willard M. Bond, Wyman Garden Centers, Inc., Framingham, president of the association, made a report of progress during the past year. This was significantly important because the association established a permanent office and hired its first full-time executive secretary in September, 1957. He said that now nurserymen throughout the state have a fully active trade association that they can be proud of and that its membership is being increased each month with nurserymen who recognize the advantages of cooperative

action by members of an industry dedicated to the service of a consumer public.

He cited as examples of the M. N. A.'s accomplishments in the past year the working relationships established between the industry and state agencies, the favorable press relations with newspapers throughout the state and the inception this spring of a bimonthly live television program sponsored as a public service at WHDH-TV, Boston.

Mr. Bond said that the association could be particularly proud of the trademark developed for it this year and predicted that soon the public will identify unquestionable top-quality product and services with those who display it at their nurseries and in their newspaper advertising. Mr. Bond commended the membership for support of their trade association and their determination to make it and its standards a guiding light for the industry and the people it serves.

Nine States Represented At New England Meeting

By Sidney Waxman

The summer meeting of the New England Nurserymen's Association was held August 20 at Adams Nursery, Inc., Westfield, Mass. On hand to welcome the members was Charles Godin, vice-president of the firm.

The meeting was a success, with approximately 500 members, employees and guests registered, representing a total of 140 different nurseries from nine states. Among those present was Valteau Curtis, Curtis Nurseries, Inc., Callicoon, N. Y., vice-president of the A. A. N. Officers of the New England Nurserymen's Association who attended the summer meeting were Harold D. Stevenson, Harold D. Stevenson Landscape Service, Rockland, Mass., president; Harry K. Eastman, Western Maine Forest Nursery Co., Fryburg, Me., vice president; Erwin W. Whitham, E. W. Whitham Sales Agency, Andover, Conn., secretary, and Alfred L. Angel, C. Hoogendoorn, Nurseryman, Newport, R. I., treasurer. Staff members of the University of Connecticut, Storrs; University of Rhode Island, Kingston; University of Massachusetts, Amherst, and the New York experiment station, Geneva, were also in attendance.

The meeting was entirely informal. An excellent smorgasbord, served in one of the nursery's packing sheds, was featured.

Members gave a rising ovation to Walter Adams, president of Adams Nursery, Inc. Mr. Adams, 91 years old, is possibly the oldest nurseryman in the country.

A group of nurserymen from the New London, Conn., area announced through their president, Warren W. Richards, Clinton Nurseries, Clinton, an invitation to the New England Nurserymen's Association to hold its 1959 summer meeting at New London.

Receive Canadian Invitation

During the day, the visitors participated in horseshoe pitching, volleyball, and a wild game of bocce. Later in the day a golf ball driving contest was held.

Bus tours were provided all day for the nurserymen to observe the 180 acres of weed-free and stone-free plantings. The visiting nurserymen were both surprised and interested

to find field corn growing in alternate fields. Mr. Godin explained that it is the nursery's policy to leave alternate fields in cover crops for two years after the removal of a crop. Field corn is being used as the cover crop during the summer. Two plantings are grown, being plowed under when the corn is approximately five feet tall. In this way a greater amount of organic matter is placed in the soil than with the conventional cover crops. During the winter, said Mr. Godin, the field is planted in rye.

Started in 1849 at Portland, Me., with a stock of apple trees, Adams Nursery, Inc., was moved to a 7-acre site at Springfield, Mass., in 1867 by the founder, John W. Adams. He continued to grow fruit trees, but increasing public demand prompted him to add new ornamental plants to his stock each year and to build several greenhouses for propagation.

In 1896 Mr. Adams' two sons, Walter and Charles, were admitted to the firm. In 1911 Walter Adams was made president at the death of his father and has continued in office up to the present. Charles Adams

became treasurer and remained active until his death in 1945, when Floyd Oatman, of the third generation, assumed his duties. Mr. Oatman continues to direct all activities of the nursery, acting as general manager as well as treasurer.

By 1912 the nursery had grown so that a 40-acre farm was bought at Westfield, on the main highway between Springfield and Westfield. From time to time additional land has been acquired until today there are about 200 acres.

The operation of the nursery is divided into a wholesale, retail and landscape business, with storage facilities for dormant stock, greenhouses for propagation and a nursery mart for retail sales. While most of the desirable trees, shrubs and evergreens are grown in quantity, certain varieties found especially adaptable to New England conditions have become specialties. Among these is *Daphne cneorum*.

OUTPOST NURSERIES, INC., Ridgeport, Conn., has sold 1.1 acres of land on Cooper Beech lane.

WINNER of one of the New Mexico Association of Nurserymen's two \$100 annual Dan Carpenter memorial scholarships for 1958 was Bernard Corley, El Paso, Tex., a senior at New Mexico College of Agriculture and Mechanic Arts. It is the second time he has received this association award.

NEW ENGLAND PRESIDENT



Harold D. Stevenson

The president of the New England Nurserymen's Association, Harold D. Stevenson, Harold D. Stevenson Landscape Service, Rockland, Mass., has been known as a designer of outstanding exhibits for

the Boston flower show for the past 23 years. His many awards for these displays include 28 gold medals, five silver medals and six president's cups. Mr. Stevenson is chairman of the flower show exhibitions committee of the Massachusetts Horticultural Society and has served as landscape architect for the same committee since 1949. In this capacity he has done much research to achieve authenticity in his displays for the society.

Mr. Stevenson received his degree in landscape architecture from the University of Massachusetts, Amherst, in 1924 and joined the staff of the Miami, Fla., park department, where he remained for three years. He worked for nurseries in Pennsylvania and Connecticut before starting his own business at Camden, Me., in 1929. In 1931 he became associated with Bay State Nurseries, Inc., North Abington, Mass., and was head of the firm's landscape department for 22 years. He left the Bay State Nurseries to open the Harold D. Stevenson Landscape Service in 1953.

A past president of the Massachusetts Nurserymen's Association, he is also a trustee of the Massachusetts Horticultural Society and a member of the Horticultural Club of Boston. He is active in community and church affairs and spends his leisure time in a variety of activities, including painting, sculpture, photography, fishing and boating.

Tips for Better Landscapes

Two Legumes with Landscape Value

By Clarence E. Lewis

Department of Horticulture, Michigan State University, East Lansing, Mich.

Sometimes a supposed "weed tree" has a place in the home landscape, even though it does not have a highly favorable reputation. The black locust, *Robinia pseudoacacia*, which is also known as yellow or common locust, has a surprising number of variations and forms. Some of these are available in a few nurseries, others are "chance plants," in the wild or are found primarily in arboretums.

This tree has naturalized itself east of the Rocky mountains to as far south as northern Georgia, northward to southern Illinois and south and central Pennsylvania, and is also found in Missouri, Arkansas and Oklahoma. It is often seen in broad thickets of stunted trees, but where it has sufficient sunlight and is not crowded, trees of more than 36 inches in diameter will develop. The bark, shown in illustration A, is, in time, deeply furrowed and as thick as one to two inches. The height of this tree, whose wood is heavy, close grained and hard, can be 75 feet. (See illustration B for a specimen over 50 feet high and a group in illustration C of about the same height.) The pale yellow sapwood, from which comes the tree's alternate name of yellow locust, may make two or three layers of annual growth.

The pinnately compound leaves, which may be a foot long, have from



Illustration A—The furrows in black locust bark grow deeper with maturity.

seven to 19 leaflets, but, more commonly, nine to 15. The oval leaflets can be observed in illustration D. The leaf miner can do so much damage in its tunneling action that the leaves might just as well drop. At night there is a tendency for the leaflets to fold.

Native Tree

At one time it was thought that this locust was native to Europe and had been brought from there to this country. The reverse is true. The black locust was introduced into Europe from the United States by Jean and Vespasien Robin before the middle of the 17th century and soon naturalized itself there. The Robins were botanists to King Henry IV of France. The generic name, *Robinia*, of course, comes from the Robin family, and the species name, *pseudoacacia*, refers to false acacia, because the flowers resemble those of the acacia.

The pealike white to creamy flowers appear as racemes about four to eight inches long. The leaves are fully expanded before the flowers appear in late May. The fragrance is pleasing, particularly on a dewy evening. Illustration E shows flowers as photographed on Memorial day, May 30.

Most persons think of the black locust in relation to the durability of

the wood and probably of its use as a fence post. After spending hours with the late Henry Hicks on various Long Island field trips, I became thoroughly convinced that locust posts could last 100 years. Mr. Hicks said that the shipmast locust, *Robinia pseudoacacia rectissima*, had greater durability than the species. The trees that we observed were single-trunked, tall and straight, with a few short branches near the top. There seemed to be fewer borers than in the species, probably because of the fewer small branches.

Most younger branches and small trees of this locust have a heavy infestation of stem borers. It is not effective to remove the side branches of small trees to eliminate the borers. Instead, the borers become more prominent in the main trunk when the branches are removed. Winds will also cause more havoc, since the tops become heavy with branches, encouraging more breakage and deformation.

Locust posts laid horizontally will hold a steep bank. Such a bank becomes doubly interesting if the coarse bark of the locust post is left to add texture. The combination of locust bark and trailing Baltic ivy, myrtle or something similar is attractive.

Resists Low Temperatures

Robinia pseudoacacia is hardy and can be successfully planted where



Illustration B—Some specimens add an impression of picturesque antiquity to their surroundings.



Illustration C—Small natural stands of black locust are common in the east.

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temperatures drop to 25 degrees below zero, or even lower. It not only withstands such rigors, but will grow in soils with little or no organic matter and on slopes of 20 or more degrees.

Most people are aware of the stipular spines on either side of the small branch nodes and, occasionally, on older branches. One becomes particularly conscious of these spines when walking through a planting or seeding of young trees. There is a thornless variety, *R. pseudoacacia inermis*, which has no particular advantage other than its lack of spines.

Among the other varieties, and there are many, as was intimated earlier, are the Besson locust (*R. pseudoacacia bessoni*), which is compact and spineless and sometimes recommended as a street tree, but its value as such is limited, because of its brittle wood. Other types include the vigorous-growing, pink-flowered form called Monument; the columnar, spineless pyramidalis variety, and the light rose-flowered Decaisne locust (*R. pseudoacacia decaisneana*). The perpetual black locust, *R. pseudoacacia semperflorans*, is different in that the flowers appear off and on during the summer period, and the golden black locust, *R. pseudoacacia aurea*, with its yellow leaves, is unusual, but of questionable value in landscape use. The Rozynsky locust, *R. pseudoacacia Rozynsky*, is also listed as available.

Others that seem to be rarely, if ever, listed in the trade include the following varieties or forms: *Crispa* (with crinkled leaflets), *microphylla* (small leaflets), *unifolia* (simple, not compound), *tortuosa* (with twisted branches), *umbiculifera* (having a globe head), and *pendula* (the weeping form).

This member of the legume family that often appears without warning has been successfully used as a live tree. One family moved into a new home with four or five well-branched black locusts on a property devoid of other trees. Instead of putting the axe to all these, the owner thinned out one or two and today, six years later, he has a place to picnic in the shade. They are not ideal shade trees, but under certain circumstances can be used and appreciated by those who do not wish to start new shade trees from scratch.

Where the soil has little or no water-holding capacity, the black locust may be planted. Such sterile soils are a problem, doubly so if a slope is also present. This tree of thin pods (two to four inches long) finds its place where others object to such growing conditions.

Laburnums

Another legume that is in much greater demand by the public is the golden chain tree (laburnum), probably because of its colorful flowers in the latter half of May, its small stature and its better publicity.

There are primarily three species, *Laburnum alpinum*, *Laburnum anagyroides* and *Laburnum watereri*. The Scotch laburnum, *Laburnum alpinum*, the hardiest of the group, is sometimes, though not always, more open than the others. It occasionally grows shrubby or short trunked, with upright branches, and may reach a height of 25 to 30 feet. It, however, takes many years to mature.

The yellow, chainlike flowers of Scotch laburnum, as may be seen in illustration F, are not only attractive, but conspicuous enough to be seen by even the most casual ob-

server. The blooms last about two weeks. All species have similar flowers, but those of the Waterer laburnum, *Laburnum watereri*, are the deepest yellow. Usually *Laburnum alpinum* produces the longest racemes, often a foot or more in length. The pealike yellow flowers can be successfully forced for a February or March flower show.

The alternate leaves appear from green stems just before the flowers. The green color persists in 1, 2, 3 and even 4-year wood. In fact, some of the large stems retain a certain amount of green, remaining a dirty olive drab. The leaves are palmately compound and usually appear as three leaflets (illustration F). Sometimes four leaflets are present and rarely five, but the latter is the unusual, not the general situation. In the spring the leaves are silky underneath, and there is a limited amount of silky covering on the tips of the young stems. The thin, flat pods with black seeds will often hang on the plant through the winter, though they can easily be removed. The unripe seeds of all laburnums are said to be poisonous.

The golden chain laburnum can be trained into a many-stemmed plant or into a single-trunked tree, the latter of which is the commoner practice. I have observed Waterer laburnum 20 feet high, with a short main trunk and a spread equal to or greater than the height.

Sources

There seems to be a difference of opinion on *Laburnum vossii* and *Laburnum watereri*. They are often listed as being synonymous, but Dr. Wyman indicates that European nurserymen differentiate between

[Continued on page 93]



Illustration D—The oval leaflets of black locust appear most frequently in numbers of nine to fifteen.



Illustration E—Robinia bears the pealike flowers that are characteristic of members of the legume family.



Illustration F—The yellow, chainlike flowers of laburnum put on an interesting display in mid-May to late May.

Planning a Fall Weed Control Program

By Robert H. Brewster

Now is the time for a nurseryman to plan his own autumn weed-control program. Weeds can be easily controlled in nursery stock. Herbicides will not entirely eliminate the weed problem. However, if they are used correctly, they will reduce the work load, especially at peak times, such as the digging period in the spring.

The biggest cost factor of any nursery, large or small, is labor. The chore that takes the most labor is cultivation. Cultivating an acre, even when weeds are no problem, costs from \$3 to \$5.

To start a weed control program, a nurseryman must know weeds, the capabilities of herbicides and their timing. Also he must understand how to calibrate and how to keep records of weed control.

Some nurserymen might be fooled by the statements of manufacturers telling how simple it is to apply an herbicide for a particular crop. In most of these instances, there is usually only one season involved, and, therefore, one set of weeds, and quite often the proper time to apply the herbicide is before planting. The quick adoption of these herbicides is not for the average nurseryman. The nursery weed problem is that an herbicide has to be used for two sets of seasonal weeds and applied when the plants are growing.

Chloro IPC Suggested

In Suffolk county, L. I., N. Y., it is suggested to the commercial nurserymen to try granular Chloro IPC in the autumn, to eliminate weed problems in the spring. The treatments are suggested for nursery stock after it has been cultivated or when fall weeds are just seedlings, even in August. It is suggested that they use 160 pounds of granular (5 per cent) Chloro IPC per acre or 1.4 pounds of 5 per cent Chloro IPC to 400 square feet. The preferred granular material is attaclay or agrilite, which is a large-particled perlite. When either is used as a base for this granulation it does not stick to the plants. Formulations with vermiculite as a base are satisfactory, but may stick and lodge. Whichever base is used, the granular applications should be made when the foliage of the nursery stock is dry.

Such applications have been highly successful in keeping down chickweed, *Poa annua* and other perennial weeds that germinate in the fall

and may become a heavy problem for nurserymen the following spring. An application made in August or any time up to Christmas can keep such beds free of weeds through the following spring, or at least until the end of May. Everyone cannot expect to have 100 per cent success in all years, nor will chemical applications control some perennial weeds, such as bindweed, quackgrass and nut grass, but they have given excellent results in the many trials that have been made during the past three years.

Application

The next important consideration for nurserymen is how to apply granular Chloro IPC. The recommended method is to apply it with a fertilizer spreader, preferably with a board under the holes to spread it as evenly as possible. The material bounces off the board and the result is an even distribution of the material. An ordinary lawn-type spreader has worked out satisfactorily. To treat taller nursery stock, plywood wheels have been made which are merely bolted to the spreader wheels and can raise the height two to four feet above the ground.

A power duster can be used instead of a spreader. For small areas a crank duster may be used. There is on the market a Cyclone spreader manufactured for use on home lawns. With a few minor supports this can be used for more rugged nursery work.

Some growers prefer to use a liquid Chloro IPC spray. They use it at the rate of eight quarts to 40 to 100 gallons of water per acre, depending on their equipment. They spray below the nursery foliage into the base of the plant, on a strip of soil about 12 to 18 inches wide. However, the granular form is preferred by most nurserymen, as it is much safer to use on nursery stock. Usually, no harm is done to nursery stock when the emulsifiable forms are used; however, in one instance, this spray did seem to hinder growth.

There are many combinations of Chloro IPC with other herbicides now on the market, such as Chloro IPC combined with Crag No. 1 or SES. Such herbicides are as good as or better than Chloro IPC alone and may kill a wider variety of weeds, but more experimental work must

be done with these herbicides on all nursery crops.

There are two other materials that show promise. One is called Simazine and another is diuron. Simazine kills a broader range of weeds than Chloro IPC and lasts longer. It is suggested for trial use at one to four pounds per acre for nursery stock. Locally, it has done a good job in blocks of euonymus, taxus and roses, in flats of pachysandra and in Vinca minor and in bedding stock of iberis. Diuron is suggested as a wet spray at the rate of one to two pounds to 40 to 100 gallons of water or three to six teaspoonfuls per gallon of water per 400 square feet. It looks promising on azaleas and rhododendrons, but taxus is sensitive to this material. For taxus and surface-rooted stock, three-quarters to one and one-half pounds per acre or two to four teaspoonfuls to 400 square feet should be used. This material should do a good job on chickweed and annual bluegrass and may, the following season, get weeds that Chloro IPC will not touch.

Soil Sterilants

Early fall is the time to prepare seedbeds for the following spring. For small areas, such as cold frames, the use of a soil sterilant before the nursery stock is planted is suggested. This may be done at any time until the soil temperature drops below 55 degrees Fahrenheit.

Soil for hotbeds and container soil to be used during the winter or spring months also should be prepared as if for a seedbed. The soil should be moist but not wet. Steam, methyl bromide, Vapam, or VPM or Chem-vape, and granular calcium cyanamide all are effective.

Steaming is the best method of controlling weeds, diseases, nematodes and soil-borne insects. Steaming means raising the soil temperature to 180 degrees F. for 30 minutes. Those who have greenhouses with steam boilers should use steam. Other nurserymen should consider portable steam generators that may be rented or purchased. A steam "jenny" does not produce a volume of steam sufficient to be effective. A 25 to 40-horsepower boiler is necessary to sterilize an area four feet wide, six inches deep, and 100 feet long.

Methyl bromide is perhaps the

[Continued on page 28]

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Indiana Outing Features Tour and Demonstrations

By Donald L. Schuder

Members and guests of the Indiana Association of Nurserymen and their families enjoyed a 2-day summer outing in southern Indiana on August 6 and 7. There were approximately 165 persons in attendance, representing the states of Indiana, Kentucky, Illinois, Wisconsin, Alabama, Ohio, Michigan and Tennessee.

Wednesday morning, the members met at the Graham Nursery, Jeffersonville, where they registered and toured the attractive and well-maintained nursery. The nurserymen thoroughly enjoyed seeing the varied plant material that southern Indiana nurserymen use in their landscape work. Some of the unusual plants that attracted interest were the silk tree, abelia and China fir. The last-named was new to many of the nurserymen from more northern regions, where lower temperatures forbid the use of its dark green, handsome foliage.

At noon, an excellent lunch was served in the newly constructed office of the Graham Nursery. The registrants ate ham and chicken beneath the trees surrounding the attractively landscaped home of Mr. and Mrs. William Graham, which is adjacent to the office building.

After lunch, five different firms demonstrated the nursery equipment they manufacture. The In-

diana Tractor Sales Co., Indianapolis, was represented by George M. Rust and Lawrence Richwine, who demonstrated two Ford tractors with a soil auger, mower and a Gill pulverizer. I. D. Allen and Grady M. Nation, International Harvester Co., Louisville, Ky., showed two International tractors. The Kenney Machinery Corp., Indianapolis, represented by Harry C. Ranft and others, displayed and discussed the Howard Rotovator, the Royer shredder, the Ryan Jr. sod cutter, chain saws and fertilizer. Jack Dayton and Walt Holiman, Jack Dayton & Son, Louisville, exhibited Hudson sprayers and dusters, Gravely tractors and the Royer shredders. The Kentucky Seed Co., Louisville, was represented by Frank G. Gergamini and Norm Morrison, who presented grass seed, peat moss, shears and Hudson sprayers and dusters for inspection.

During the afternoon, a school bus was utilized to shuttle the guests between the Graham Nursery and the Knob Hill Nursery at nearby New Albany, where George Heilman was the genial host for a tour of his nursery.

At 6 o'clock Wednesday evening, the group boarded a boat for a 4-hour trip on the Ohio river. The boat traveled upriver past Twelve Mile island to Fourteen Mile creek

and returned about 10 o'clock. An excellent meal was served on board, and the passengers were entertained by a small musical group, which also played for dancing. Most of the group gathered on the third deck to enjoy the breeze and scenery.

The program committee for the winter meeting spent two hours on the lower deck drafting a tentative winter program. Howard Gaar, chairman, was pleased with the progress made, and it appears that the association will have both an entertaining and instructive winter session. The C & J Nursery, New Albany, was accepted into membership by the executive board of the I.A.N.

Thursday morning, the group assembled at the Graham Nursery and formed a caravan which journeyed to Wyandotte caves, west of Corydon. Everyone thoroughly enjoyed the beautifully lighted display of stalactites and stalagmites with which the cave abounds. Part of the group then returned to Corydon to visit the historic old state capitol. Both groups assembled at the Adamson Nursery, east of Palmyra, at noon for barbecued chicken.

After dinner, the men toured the nursery and the ladies visited the new stone home of Mr. and Mrs. Kermie Adamson. The large variegated dogwood tree located near the office of the Adamson Nursery attracted a great deal of interest and favorable comment. The members of the Indiana association and their guests expressed their appreciation to the hosts, Bruce and William Graham, George Heilman and Kermie Adamson, for arranging the fine summer meeting.



Officers of the Indiana Association of Nurserymen at the group's summer outing, August 6 and 7: Left to right, Argel Pion, Pion Landscape Co., Fort Wayne, vice-president; Donald L. Schuder, Purdue University, Lafayette, executive secretary, and R. C. Simpson, Simpson Orchard Co., Vincennes, president.



Hosts for the summer outing of the Indiana Association of Nurserymen, shown at the Adamson Nursery, Palmyra, where members gathered on the second day of the event: Left to right, George Heilman, Knob Hill Nursery; William Graham and Bruce Graham, Graham Nursery, and Kermie Adamson.

Vines and Espalier Plants Grow in Landscape Value

By K. W. Reisch

Although "vines" indicate a type of plant and "espaliers" suggest a method of training plants, the landscape effects of the two subjects discussed here are similar. In fact, vines are often used as espalier plants. Vines have been used as ground cover plants extensively, but their use as climbers has had relatively little emphasis in contemporary landscaping. Espalier plants also, though the technique used in training them is an old one, are new and rare in our landscapes.

The use of these plants is becoming more important and significant in today's less spacious landscapes. Properties are smaller, gardens are restricted, the broad shrub border of a few years ago is no longer practical in many instances, and the factor of space for living is uppermost in many minds. The desirability of privacy and enclosure has led to the more extensive use of fences or walls, which fulfill these needs with little use of ground space. These large, blank expanses in the landscape have created a separate area for consideration in the design, this area being vertical surface. The value of vines and espalier plants in this part of the design is evident.

Perform Many Functions

A number of functions can be served by plants used in this manner. Some of these are to reduce glare; create shadow effects; reduce noise; produce flowers or fruit; reduce the bareness of blank walls; add interesting line effects and patterns; serve as a background for other plants; screen out objectionable views, and, in some cases, serve as the main feature of the design. One of the most important values of these plants is the apparent effect of height and size without the occupation of large areas of ground space.

Although either vines or espalier plants will fulfill each of the previously mentioned functions, their characteristics and requirements differ in many respects. The French word espalier is defined as a trellis

or framework for training plants on a flat surface. The term is generally used to indicate the technique of training plants against a wall or other vertical surface by the use of structural materials, such as wires, hooks, vine guides, etc., to which the plant is attached. In many cases, a definite pattern is used.

Vine Attachments

Vines, however, become attached to a surface by various natural means and will usually climb in a vertical direction unless trained otherwise. When vines are selected for use in a landscape planting, a knowledge of the means of attachment is necessary. For example, some means of

support must be furnished for vines which climb by twining, such as bittersweet; those which climb with modified leaf stalks, such as clematis, and those which climb with tendrils, such as porcelain vine.

Vines with holdfasts, such as English ivy, or with adhesive discs, such as Japanese creeper, will become attached to any surface, and no other structure is necessary. When one uses these vines, however, he must consider the type of surface they are to cover, because damage may be caused on wooden walls of a house or other building, whereas the use of these types on stone, brick or concrete walls and on wooden fences is common.

Rate of Growth Important

When selecting a vine, one should also consider the rate and extent of growth, because a rank-growing vine such as the common Japanese creeper may engulf or completely cover an area, whereas the slower-growing, smaller-leaved Veitch and the Low's forms of this vine would give restricted coverage, which, in many cases, is more desirable.

Vines are usually selected on the basis of the ornamental effect produced by their flower, fruit, or foliage characteristics. Among the more common vines with attractive ornamental fruits are American and Oriental bittersweet, which climb by twining and bear attractive orange-yellow fruits, which are also used extensively for decorative purposes. The porcelain vine is unusual in that it bears multicolored fruit of blue, green, white, purple and speckled appearance, which creates an attractive effect. Another showy fruit is that of the sweet autumn clematis, which is distinctive because of its white, billowy appearance.

Flowering vines are often considered first in vine selection, and many excellent types are available. The Mme. Galen trumpet creeper climbs by rootlike holdfasts; is rank in growth, and bears attractive, trumpet-shaped, orange flowers in July. A warmer-climate vine that is growing on the campus of Ohio State University, Columbus, is the passion flower, which bears beautiful blue to white flowers from July to September. It climbs by tendrils and requires some protection in the Columbus area.

An excellent flowering vine is the climbing hydrangea, which is a vigorous plant that climbs by rootlike holdfasts. The attractive white flowers, borne in June and July, add to the beauty of the vine. In addition

[Continued on page 119]

SELECTED VINES

The following list of desirable vines was prepared by K. W. Reisch:

FLOWERING FORMS

Campsis tagliabuana Mme. Galen
Clematis jackmani
C. jackmani Crimson Star
C. lanuginosa Crimson King
C. lanuginosa Lady Caroline Neville
C. lanuginosa Nelly Moser
C. lanuginosa Ramona
C. lawsoniana henryi
C. montana rubens
C. paniculata
Hydrangea petiolaris
Passiflora caerulea
Polygonum auberti
Wistaria floribunda macrobotrys
W. floribunda rosea
W. sinensis alba

BEARING ATTRACTIVE FRUIT

Ampelopsis brevipedunculata maximowiczii
Celastrus orbiculata
Celastrus scandens
Euonymus fortunei vegetus

PROVIDING FOLIAGE INTEREST

Actinidia arguta
Aristolochia durior
Akebia quinata
Parthenocissus tricuspidata veitchii
P. tricuspidata lowii
P. quinquefolia engelmannii (fall foliage)

FOR EVERGREEN FOLIAGE

Euonymus fortunei
E. fortunei coloratus
E. fortunei minimus
E. fortunei vegetus
Hedera helix Baltic
H. helix Roumanian
H. helix Thordale
H. helix Wilson
Lonicera japonica halliana

An address, "Vines and Espalier Plants" delivered by Kenneth W. Reisch, department of horticulture and forestry, Ohio State University, Columbus, as part of the landscape day program of the Ohio short course this year.

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**says Ian Morrison, Agronomist
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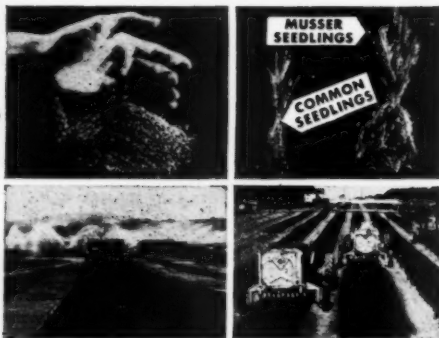
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	Per 100	Per 1000
* SPECIAL STRAIN SCOTCH PINE		
Very best Christmas tree strain. Grown from seed collected by our own men from selected parent trees. Exceptionally healthy, sturdy, straight-stemmed. We have all other best strains Scotch Pine.		
2-yr., S., 4 to 8 ins.	\$ 6.00	\$ 30.00
3-yr., S., 6 to 12 ins.	13.00	65.00
4-yr., T., 8 to 12 ins.	20.00	100.00
* MUGHO PINE		
3-yr., S., 3 to 5 ins.	7.00	35.00
5-yr., T., 4 to 8 ins.	20.00	100.00
* AUSTRIAN PINE		
2-yr., S., 3 to 6 ins.	5.00	25.00
3-yr., S., 8 to 14 ins.	9.00	45.00
* BLACK HILLS SPRUCE		
3-yr., S., 5 to 10 ins.	7.00	35.00
4-yr., S., 8 to 12 ins.	10.00	50.00
5-yr., T., 8 to 12 ins.	24.00	120.00
* NORWAY SPRUCE—Fast-growing		
2-yr., S., 5 to 10 ins.	7.00	35.00
3-yr., S., 8 to 14 ins.	10.00	50.00
3-yr., T., 6 to 12 ins.	13.00	65.00
5-yr., T., 12 to 18 ins.	30.00	125.00
* WHITE SPRUCE		
3-yr., S., 8 to 12 ins.	9.00	45.00
4-yr., T., 10 to 15 ins.	18.00	90.00
* COLORADO BLUE SPRUCE		
3-yr., S., 4 to 8 ins.	9.00	45.00
4-yr., T., 4 to 8 ins.	18.00	90.00
* DOUGLAS FIR		
2-yr., S., 5 to 10 ins.	7.00	35.00
3-yr., S., 8 to 12 ins.	11.00	55.00
* AMERICAN ARBORVITAE		
3-yr., S., 8 to 12 ins.	8.00	40.00
* CANADIAN HEMLOCK		
2-yr., S., 4 to 8 ins.	10.00	50.00
3-yr., S., 8 to 14 ins.	21.00	120.00
5-yr., T., 8 to 14 ins.	10.00	200.00
* CONCOLOR FIR		
2-yr., S., 3 to 6 ins.	9.00	45.00

	Per 100	Per 1000
* JAPANESE YEW		
Taxus cuspidata capitata—upright pyramidal		
2-yr., S., 3 to 6 ins.	\$20.00	\$150.00
3-yr., S., 4 to 8 ins.	30.00	200.00
Taxus cuspidata—spreading		
1-yr., T., 5 to 6 ins.	20.00	150.00
2-yr., T., 6 to 8 ins.	30.00	250.00
3-yr., T., 8 to 12 ins.	40.00	350.00
Taxus hicksi—upright		
1-yr., T., 5 to 7 ins.	25.00	175.00
2-yr., T., 8 to 12 ins.	40.00	300.00
Taxus brownii—upright		
1-yr., T., 4 to 6 ins.	25.00	175.00
2-yr., T., 6 to 8 ins.	40.00	300.00
Taxus cuspidata capitata—spreading		
From side cuttings.		
*3-yr., T., 8 to 12 ins.	40.00	350.00
* (Heavy Liner)		
Taxus intermedia—spreading		
1-yr., T., 4 to 6 ins.	25.00	175.00
*3-yr., T., 8 to 12 ins.	40.00	300.00
* (Heavy Liner)		
Taxus andersonii—spreading		
1-yr., T., 5 to 7 ins.	20.00	150.00
* JUNIPER HETZI GLAUCA		
1-yr., T., 5 to 7 ins.	25.00	200.00
* GLOBE ARBORVITAE		
Woodwardi—dark green		
1-yr., T., 4 to 6 ins.	30.00	250.00
Hovey's—green		
1-yr., T., 4 to 6 ins.	30.00	250.00
* PYRAMIDAL ARBORVITAE—Compacta		
1-yr., T., 5 to 7 ins.	25.00	200.00
* JAPANESE HOLLY		
Ilex rotundifolia		
1-yr., T., 5 to 6 ins.	20.00	200.00
*4-yr., TT., 12 to 15 ins.	\$1.75 each	...
* (Sold in lots of 5 or more)		
* AMERICAN HOLLY—Ilex opaca		
(Sexes separate)		
1-yr., T., 10 ins. and up...	50.00	400.00
* WHITE DOGWOOD		
Seedlings, 4 to 8 ins.	9.00	...

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COMING EVENTS

MEETING CALENDAR

September 15 and 16—Nebraska Association of Nurserymen, Pawnee hotel, North Platte, Neb.

September 16 to 18—California Association of Nurserymen, annual convention, Rickey's Studio Inn, Palo Alto.

September 29—Fourth annual short course for South Dakota florists and nurserymen, South Dakota State College, Brookings, S. D.

October 23 to 25—American Horticultural Congress, annual congress, Williamsburg, Va.

MANAGEMENT CONFERENCE

The American Association of Nurserymen will hold its first management conference for owners and managers of member firms October 12 to 18 at Sagamore, a resort in the Adirondack mountains of New York. During the morning sessions, basic principles of management in several areas of business activity will be presented by members of the teaching staff of the Syracuse University school of business administration. Work groups will be formed in the afternoons to discuss and apply these basic principles to the specific type of nursery business in which each conferee is interested.

Subjects to be taken up during the 1-week program have been announced as follows by the A. A. N.:

ACCOUNTING — Modern accounting principles; standardization of terminology and methods; accounting records; analysis of accounting data; cost control; budgeting; preparation of tax reports; ways of saving money.

PERSONNEL — Job descriptions; selection of employees for increased productivity; cultivating the will to work; training; supervision; incentives and rewards; fringe benefits.

FINANCE—Kinds and sources of funds; getting working capital; use of credit; the cash budget; the flow of funds; purchasing and inventory control; credits and collections.

MARKETING — Distribution channels for nursery products; current problems in marketing; planning a sales program; training salespersons; evaluation of a sales program; analysis of motivation in buying; diversification of product; advertising.

JOHN FAVINGER has been appointed Indiana state entomologist, succeeding Frank Wallace, retired.



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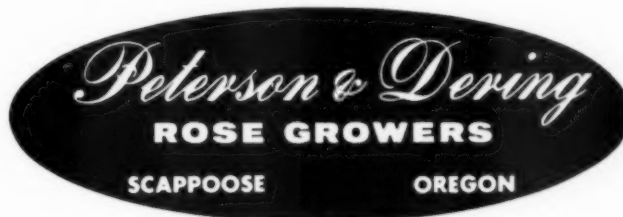
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blooms with yellow undertones.

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TERMS: Our terms are net, 30 days from invoice date, to firms with established credit, unless otherwise arranged. Interest at 6% will be charged on past due accounts.

ORDERS: Orders are booked subject to crop failure or injury to stock and to errors in count or estimate grades. We will, however, make every effort to fill all orders accepted.

CLAIMS: Claims made for any reason must be made promptly to receive consideration. Claims for error in count or for stock injured in packing or otherwise must be made within 10 days of receipt of stock. Claims made promptly will receive careful consideration. We do not guarantee the life of any stock. We do guarantee to ship good quality plants, in good condition when we load them out.

QUANTITIES: Our prices are based entirely on wholesale quantities, and on long and widely assorted lots of stock, the per 10 price will prevail, even if a full load of stock is ordered. This is necessary because of the greater cost of assembling and loading such an order. Normally 25 or more plants will take the 100 rate.

SHIPPING: All stock is sold F.O.B. our nursery at Collierville and travels at the risk and expense of the purchaser. We do have access to a large fleet of refrigerator semitrailer vans at a very advantageous rate and can arrange for delivery to you very economically. We make pool shipments to customers who want less than a full truckload of plants and we usually prepay freight charges on pool shipments and prorate the freight to the customers on a weight basis. We do not box any plants for L.C.L. shipment, as the cost of boxing B&B stock is prohibitive. We do, of course, box lining-out stock.

AMERICAN ARBORVITAE VARIETIES

(*Thuja occidentalis*)

	Per 10	Per 100
Dark Green American Arborvitae	\$2.25	\$2.00
30 to 36 ins.	2.75	2.50
3 to 4 ft.	3.50	3.00
4 to 5 ft.		
Compacta erecta globosa Arborvitae		
15 to 18 ins.	1.60	1.40
18 to 24 ins.	2.00	1.75
24 to 30 ins.	2.50	2.25
30 to 36 ins.	3.00	2.60
Globosa (American Globe) Arborvitae		
12 to 15 ins.	1.45	1.25
15 to 18 ins.	1.80	1.60
18 to 24 ins.	2.25	2.00
24 to 30 ins.	2.75	2.50
Pyramidal American Arborvitae		
18 to 24 ins.	1.60	1.35
24 to 30 ins.	1.80	1.65
30 to 36 ins.	2.50	2.25
3 to 4 ft.	3.00	2.75
4 to 5 ft.	3.75	3.50
5 to 6 ft.	4.50	4.25

ORIENTAL ARBORVITAE VARIETIES

(*Thuja orientalis*)

	Per 10	Per 100
Baker Arborvitae	\$1.40	\$1.35
2 to 3 ft.	2.00	1.75
3 to 4 ft.	2.50	2.25
4 to 5 ft.		
Berckmans Arborvitae		
15 to 18 ins.	1.40	1.20
18 to 24 ins.	1.70	1.50
24 to 30 ins.	2.25	2.00
30 to 36 ins.	2.75	2.50
Blue Cone Arborvitae		
18 to 24 ins.	1.20	1.00
24 to 30 ins.	1.45	1.25
30 to 36 ins.	1.70	1.50
Bonita Arborvitae		
15 to 18 ins.	1.35	1.20
18 to 24 ins.	1.65	1.50
24 to 30 ins.	2.25	2.00
30 to 36 ins.	2.75	2.50
Excelsa Arborvitae		
24 to 30 ins.	1.40	1.25
30 to 36 ins.	1.70	1.50
Fruitlandi Arborvitae		
18 to 24 ins.	1.40	1.25
24 to 30 ins.	1.70	1.50
30 to 36 ins.	2.25	2.00
Golden Ball Arborvitae		
12 to 15 ins.	1.25	1.10
15 to 18 ins.	1.50	1.35
Newark Arborvitae		
24 to 30 ins.	1.40	1.25
30 to 36 ins.	1.70	1.50
3 to 4 ft.	2.25	2.00
4 to 5 ft.	2.75	2.50

JUNIPERS, SPREADING VARIETIES

	Per 10	Per 100		Per 10	Per 100
Andorra Juniper			Hetz Blue Juniper		
15 to 18 ins.	\$1.60	\$1.40	15 to 18 ins.	\$1.45	\$1.25
18 to 24 ins.	1.90	1.75	18 to 24 ins.	2.00	1.75
24 to 30 ins.	2.50	2.25	24 to 30 ins.	2.50	2.25
			30 to 36 ins.	3.00	2.75
Andorra Juniper, green			Savin Juniper		
15 to 18 ins.	1.60	1.40	12 to 15 ins.	1.00	0.90
18 to 24 ins.	1.90	1.75	15 to 18 ins.	1.35	1.20
24 to 30 ins.	2.50	2.25	18 to 24 ins.	1.75	1.60
Meyer Juniper			Von Ehrh Juniper		
15 to 18 ins.	1.75	1.50	15 to 18 ins.	1.35	1.20
Pfitzer Juniper			18 to 24 ins.	1.75	1.60
12 to 15 ins.	1.25	1.10	24 to 30 ins.	2.25	2.00
15 to 18 ins.	1.65	1.50	30 to 36 ins.	2.75	2.50
18 to 24 ins.	2.20	2.00			
24 to 30 ins.	2.75	2.50	Sargent Juniper (sargentii)		
30 to 36 ins.	3.25	3.00	12 to 15 ins.	1.25	1.10
Pfitzer Blue Juniper			15 to 18 ins.	1.65	1.50
15 to 18 ins.	1.65	1.50	Repanens Juniper		
18 to 24 ins.	2.25	2.00	(<i>Virginiana repandens</i>), dark green, good winter color		
Compact Pfitzer Juniper			12 to 15 ins.	1.00	0.90
12 to 15 ins.	1.25	1.10	15 to 18 ins.	1.35	1.20
15 to 18 ins.	1.65	1.50	18 to 24 ins.	1.75	1.60
18 to 24 ins.	2.20	2.00	Virginiana Juniper		
24 to 30 ins.	2.75	2.50	Vase-shaped, light green		
Pfitzer Nana Juniper			15 to 18 ins.	1.35	1.20
12 to 15 ins.	1.25	1.10	18 to 24 ins.	1.75	1.60
15 to 18 ins.	1.65	1.50	24 to 30 ins.	2.25	2.00
18 to 24 ins.	2.20	2.00			

JUNIPERS, UPRIGHT VARIETIES

	Per 10	Per 100		Per 10	Per 100
Juniperus virginiana glauca			Fastigiata Juniper		
2 to 3 ft.	\$2.75	\$2.50	24 to 30 ins.	\$1.10	\$1.00
3 to 4 ft.	3.75	3.50	30 to 36 ins.	1.40	1.25
4 to 5 ft.	4.75	4.50	3 to 4 ft.	1.65	1.50
			4 to 5 ft.	2.25	2.00
Juniperus virginiana burki			Greek Juniper		
2 to 3 ft.	2.75	2.50	(<i>Juniperus excelsa stricta</i>)		
3 to 4 ft.	3.75	3.50	15 to 18 ins.	1.35	1.20
Juniperus virginiana canaerti			18 to 24 ins.	1.65	1.50
2 to 3 ft.	2.75	2.50	24 to 30 ins.	2.25	2.00
3 to 4 ft.	3.75	3.50	30 to 36 ins.	3.00	2.75
Juniperus virginiana canaerti			Hetz glauca Juniper, pyramids		
2 to 3 ft.	2.75	2.50	(<i>Hetz Glauca</i>), staked and trained to pyramids		
3 to 4 ft.	3.75	3.50	24 to 30 ins.	2.25	2.00
4 to 5 ft.	4.75	4.50	30 to 36 ins.	3.00	2.75
Cupressifolia Juniper			Mascula Juniper		
(<i>Hillspire Juniper</i>)			(<i>Juniperus chinensis mascula</i>), gray-green pyramids		
2 to 3 ft.	2.75	2.50	3 to 4 ft.	2.75	2.50
3 to 4 ft.	3.75	3.50	Von Ehrh Juniper, pyramids		
Dundee Juniper			(<i>Juniperus sabinia Vonehrh</i>), staked and trained to pyramids		
2 to 3 ft.	2.75	2.50	24 to 30 ins.	2.25	2.00
3 to 4 ft.	3.75	3.50	30 to 36 ins.	3.00	2.75
			3 to 4 ft.	3.75	3.50

MISCELLANEOUS CONIFERS

	Per 10	Per 100		Per 10	Per 100		Per 10	Per 100
<i>Garee Cypress</i>			<i>Chamaecyparis Cyano Viridis</i>			<i>Mugho Pine (Pinus mughus)</i>		
to 3 ft.	\$2.25	\$2.00	24 to 30 ins.	\$1.50	\$1.25	12 to 15 ins.	\$1.65	\$1.50
to 4 ft.	3.25	3.00	30 to 36 ins.	2.00	1.75	15 to 18 ins.	2.20	2.00
<i>Pinus atlantica</i>			3 to 4 ft.	2.50	2.25			
to 3 ft.	1.75	1.50	<i>Austrian Pine (Pinus nigra)</i>			<i>White Pine (Pinus strobus)</i>		
to 4 ft.	2.75	2.50	18 to 24 ins.	1.40	1.25	18 to 24 ins.	1.40	1.25
to 5 ft.	3.75	3.50	24 to 30 ins.	2.00	1.75	24 to 30 ins.	2.00	1.75
<i>Pinus decedra</i>			30 to 36 ins.	2.50	2.25	30 to 36 ins.	2.50	2.25
to 3 ft.	1.75	1.50	3 to 4 ft.	3.25	3.00	3 to 4 ft.	3.25	3.00
to 4 ft.	2.75	2.50	4 to 5 ft.	4.50	4.00	4 to 5 ft.	4.25	4.00
to 5 ft.	3.75	3.50						
to 6 ft.	4.75	4.50						

BROAD-LEAVED EVERGREENS

	Per 10	Per 100		Per 10	Per 100		Per 10	Per 100
<i>Ilia grandiflora</i>			<i>Ilex opaca Croonenburg</i>			<i>Nandina domestica</i>		
to 3 ft.	\$1.25	\$1.00	2 to 3 ft.	\$2.25	\$2.00	15 to 18 ins.	\$0.80	\$0.75
to 4 ft.	1.50	1.25	3 to 4 ft.	3.25	3.00	18 to 24 ins.	1.00	.90
<i>Illicium anisatum</i>			4 to 5 ft.	4.25	4.00	24 to 30 ins.	1.40	1.25
to 3 ft.	1.50	1.25	<i>Ilex East Palatka</i>			30 to 36 ins.	1.65	1.50
<i>Berry, julianae nana</i>			2 to 3 ft.	2.25	2.00	3 to 4 ft.	2.25	2.00
to 18 ins.	1.75	1.50	3 to 4 ft.	3.25	3.00	<i>Osmanthus fortunei</i>		
<i>Wood, harlandi</i>			4 to 5 ft.	4.25	4.00	18 to 24 ins.	1.40	1.25
to 8 ins. ....	.60	.50	5 to 6 ft.	5.50	5.00	24 to 30 ins.	1.90	1.75
to 10 ins. ....	.85	.75	6 to 7 ft.	7.50	7.00	<i>Viburnum burkwoodi</i>		
to 12 ins.	1.15	1.00	<i>Ilex fosteri (Foster No. 2)</i>			18 to 24 ins.	1.65	1.50
<i>Wood sempervirens</i>			2 to 3 ft.	2.25	2.00	24 to 30 ins.	1.90	1.75
to 18 ins.	2.25	2.00	3 to 4 ft.	3.25	3.00	30 to 36 ins.	2.25	2.00
to 24 ins.	2.75	2.50	<i>Ilex opaca howardi</i>			<i>Viburnum chenaulti</i>		
<i>Winteraster decora lactea</i>			2 to 3 ft.	2.25	2.00	18 to 24 ins.	1.65	1.50
to 30 ins.	2.00	1.75	3 to 4 ft.	3.25	3.00	<i>Viburnum juddi</i>		
to 36 ins.	2.00	1.75	4 to 5 ft.	4.25	4.00	15 to 18 ins.	1.40	1.25
<i>Opagius pungens</i>			5 to 6 ft.	5.50	5.00	18 to 24 ins.	1.65	1.50
to 3 ft.	1.25	1.00	<i>Ilex opaca Hume No. 2</i>			<i>Viburnum rhytidophyllum</i>		
to 4 ft.	1.75	1.50	3 to 4 ft.	3.25	3.00	(Leather-leaved Snowball)		
<i>Quercus coloratus</i>			4 to 5 ft.	4.25	4.00	18 to 24 ins.	1.65	1.50
to 24 ins.	1.20	1.00	5 to 6 ft.	5.50	5.00	24 to 30 ins.	1.90	1.75
to 30 ins.	1.40	1.25	<i>Ilex opaca Reynolds</i>			30 to 36 ins.	2.25	2.00
to 36 ins.	1.75	1.50	2 to 3 ft.	2.25	2.00			
<i>Quercus patens</i>			3 to 4 ft.	3.25	3.00			
to 24 ins.	1.20	1.00	<i>Ilex vomitoria, small-leaved, sheared</i>					
to 30 ins.	1.40	1.25	18 to 24 ins.	1.15	1.00			
to 36 ins.	1.75	1.50	24 to 30 ins.	1.65	1.50			
to 4 ft.	2.25	2.00	30 to 36 ins.	2.25	2.00			
<i>Lonicia stricta nana</i>			3 to 4 ft.	2.75	2.50			
to 18 ins.	1.00	.75	<i>Ilex vomitoria Pride of Houston</i>					
to 24 ins.	1.25	1.00	18 to 24 ins.	1.15	1.00			
<i>Cornuta burfordi</i>			24 to 30 ins.	1.65	1.50			
to 18 ins.	1.10	1.00	<i>Ilex vomitoria nana (Dwarf Yaupon)</i>					
to 24 ins.	1.40	1.25	12 to 15 ins.	1.50	1.25			
to 30 ins.	1.65	1.50	15 to 18 ins.	2.00	1.75			
to 36 ins.	2.25	2.00	18 to 24 ins.	2.50	2.25			
to 4 ft.	3.25	3.00	<i>Jasmine, floridum</i>					
to 5 ft.	4.50	4.00	15 to 18 ins.	1.15	1.00			
<i>Cornuta femina</i>			18 to 24 ins.	1.40	1.25			
to 18 ins.	1.10	1.00	24 to 30 ins.	1.70	1.50			
to 24 ins.	1.40	1.25	30 to 36 ins.	2.00	1.75			
to 30 ins.	1.65	1.50	<i>Ligustrum lucidum (Black Wax)</i>					
to 36 ins.	2.25	2.00	18 to 24 ins.	1.00	.90			
to 4 ft.	3.25	3.00	24 to 30 ins.	1.25	1.10			
<i>Cornuta Hume</i>			30 to 36 ins.	1.50	1.35			
Rectangular leaf, semidwarf			<i>Ligustrum lucidum, Griffling type</i>					
to 18 ins.	1.40	1.25	18 to 24 ins.	1.00	.90			
to 24 ins.	1.65	1.50	24 to 30 ins.	1.25	1.10			
to 30 ins.	2.25	2.00	30 to 36 ins.	1.50	1.35			
<i>Arceuthobium Biloxi</i>			<i>Ligustrum lucidum Suwannee River</i>					
Strong grower, very hardy,			15 to 18 ins.	1.50	1.25			
shears well			18 to 24 ins.	2.25	2.00			
to 18 ins.	1.10	1.00	24 to 30 ins.	2.75	2.50			
to 24 ins.	1.65	1.50	<i>Carolina Cherry Laurel</i>					
to 30 ins.	2.25	2.00	2 to 3 ft.	1.50	1.25			
<i>Arceuthobium convexa</i>			3 to 4 ft.	1.75	1.50			
to 15 ins. ....	.90	.80	4 to 5 ft.	2.75	2.50			
to 18 ins.	1.10	1.00	5 to 6 ft.	3.75	3.50			
to 24 ins.	1.65	1.50	<i>Laurel, English</i>					
to 30 ins.	2.25	2.00	18 to 24 ins.	1.15	1.00			
<i>Arceuthobium repandens</i>			2 to 3 ft.	1.75	1.50			
Low-spreading form			<i>Laurel, sabeli</i>					
to 18 ins.	1.10	1.00	(Strap-leaved Laurel)					
to 24 ins.	1.65	1.50	15 to 18 ins.	1.40	1.25			
<i>Arceuthobium rotundifolia</i>			18 to 24 ins.	2.00	1.75			
to 15 ins. ....	.90	.80	<i>Loropetalum chinense</i>					
to 18 ins.	1.10	1.00	(Texas Fringe)					
to 24 ins.	1.65	1.50	18 to 24 ins.	1.15	1.00			
to 30 ins.	2.25	2.00	24 to 30 ins.	1.75	1.50			
to 36 ins.	2.75	2.50	<i>Magnolia grandiflora</i>					
<i>Magnolia glabra (Inkberry), very hardy</i>			2 to 3 ft.	1.75	1.50			
to 18 ins.	1.40	1.25	3 to 4 ft.	2.75	2.50			
to 24 ins.	1.65	1.50	4 to 5 ft.	3.75	3.50			
<i>Magnolia opaca, seedlings</i>			5 to 6 ft.	5.50	5.00			
to 3 ft.	1.70	1.50	6 to 8 ft.	8.00	7.50			
to 4 ft.	2.75	2.50	<i>Magnolia glauca (Sweet Bay)</i>					
to 5 ft.	3.75	3.50	2 to 3 ft.	1.50	1.25			
to 6 ft.	5.50	5.00	3 to 4 ft.	2.25	2.00			
			4 to 5 ft.	3.25	3.00			
			5 to 6 ft.	4.50	4.00			
			6 to 8 ft.	7.00	6.00			

DECIDUOUS TREES, B&B

	Per 10	Per 100
<i>Euonymus alatus compactus</i>		
24 to 30 ins.	\$1.65	\$1.50
30 to 36 ins.	2.25	2.00
<i>Magnolia nigra</i>		
(Purple Magnolia)		
2 to 3 ft.	1.75	1.50
<i>Magnolia soulangeana</i>		
(Pink Magnolia)		
2 to 3 ft.	2.25	2.00
3 to 4 ft.	3.00	2.75
4 to 5 ft.	3.75	3.50
5 to 6 ft.	5.00	4.50
<i>Magnolia stellata (Star Magnolia)</i>		
18 to 24 ins.	2.25	2.00
2 to 3 ft.	3.25	3.00

GALLON-SIZE, CONTAINER-GROWN STOCK

	80c each
<i>Berckmans Arborvitae</i>	<i>Pfitzer Juniper</i>
<i>Blue Cone Arborvitae</i>	<i>Pfitzer Juniper</i>
<i>Bonita Arborvitae</i>	<i>Compacta</i>
<i>Andorra Juniper</i>	<i>Ilex convexa</i>
<i>Fastigata Juniper</i>	<i>Ilex rotundifolia</i>
<i>Excelsa stricta Juniper</i>	<i>Ligustrum lucidum</i>
(Greek)	

In addition to the above container-grown stock, we can dig from the field and establish in cans specimen plants of most varieties. For this service we charge list price for the variety and size canned, plus 10c each for gallon cans and 15c each for two-gallon cans. This field-grown stock in cans is for spring delivery only and must be ordered before January 1. Ask us about these items.

GRASSES

<i>Zoysia Matrella</i>	\$1.25 square yd.
<i>Zoysia Meyer Z-52</i>	1.50 square yd.
<i>Zoysia Emerald</i>	1.50 square yd.

LINING-OUT STOCK

We will have to offer for the coming season a nice lot of lining-out stock and a list will be issued on this later in the summer.

EVERGREEN SEEDLINGS

Fall, 1958 — Spring, 1959

CANALE'S FOREST NURSERY

Shelocta, Pa.

Write for special prices on large quantity lots.

Scotch Pine	Per 1000	Hemlock	Per 1000
2-yr., 1 to 3 ins.	\$ 7.00	(3-2), 4 to 8 ins.	\$ 75.00
3 to 8 ins.	15.00	8 to 14 ins.	100.00
3-yr., 8 to 14 ins.	18.00		
10 to 18 ins.	24.00		
French Scotch Pine		Norway Spruce	
3-yr., 6 to 15 ins.	25.00	2-yr., 2 to 4 ins.	12.50
Riga Scotch Pine		4 to 8 ins.	20.00
2-yr., 2 to 4 ins.	9.00		
4 to 8 ins.	20.00	White Spruce	
(2-2), 5 to 10 ins., T.	50.00	2-yr., 2 to 4 ins.	12.50
8 to 15 ins.	75.00	3 to 6 ins.	20.00
Austrian Pine		(2-2), 4 to 8 ins.	50.00
2-yr., 2 to 6 ins.	15.00	8 to 12 ins.	75.00
(2-3), 6 to 12 ins.	60.00		
Red Pine		Blue Spruce	
2-yr., 2 to 4 ins.	15.00	3-yr., 1 to 3 ins.	10.00
3-yr., 5 to 10 ins.	30.00	3 to 5 ins.	18.00
White Pine		5 to 8 ins.	35.00
2-yr., 3 to 6 ins.	20.00	4-yr., 6 to 12 ins.	60.00
Douglas Fir (Pseudotsuga glauca viridis)		(2-2), 3 to 6 ins.	50.00
2-yr., 2 to 4 ins.	15.00	6 to 10 ins.	85.00
4 to 8 ins.	30.00		
3-yr., 3 to 8 ins.	35.00	Black Spruce (Picea mariana)	
		2-yr., 2 to 4 ins.	12.50
		4 to 8 ins.	20.00

Orders must be accompanied by a 25% down payment. 5% discount on orders of 25,000. Send want list for special discounts on larger orders.

Write now or phone: Elderton, FLetwood 4-2461.

SCOTCH PINE Christmas trees available by carload lots. Inquiries invited.

PENNSYLVANIA SURVEY

The annual summary of nursery crops grown in Pennsylvania, as reported by the federal-state crop reporting service for 1957, shows a total of 2,069 nurseries operating in the state as of September 30, 1957. The largest concentration of these firms was in Allegheny county, where 177 nurseries were reported. Westmoreland county had 140 and Montgomery county 139.

Montgomery county had the largest acreage devoted to nursery crops, the report indicated, with 2,105 acres so used. Indiana county was second with 976 acres, and Erie county third with 953. Total nursery acreage in the state was given as 14,371.

Of 1,633 firms growing ornamentals, 163 were in Allegheny county to make the largest single group, with 124 in Montgomery county and 108 in Westmoreland county.

Other figures showed 27 firms growing deciduous fruits, 27 growing nuts, 19 growing roses and 241 growing perennials. Christmas trees were grown by 261 nurseries. Seedlings were produced at 143 nurseries. Fifty-eight nurseries reported having greenhouses.

5000 FINISHED TAXUS

In 5 Varieties

Certified for western shipment.

Inspection invited.

Very attractive prices quoted on large lots or the entire block.

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FRUIT TREES
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Upright, 6 to 14 ft.
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60 acres growing. Skaneateles, N. Y.

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wrap to *Protect* and *Sell* with

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NURSERY WRAPS



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Thilco Nursery Wraps, designed just for you, come in a wide selection of grades and types of waterproofness, flexibility and strength. Standard grades include asphalt, polyethylene or foil treatments in various attractive colors, in rolls, sheets or spiral windings. Special grades are also available — and all can be Print-Decorated with any message you choose including specific plant care and directions.



SPECIALTY BAGS FOR UNIT PACKAGING

An almost limitless variety of bags of all sizes, types, weights and duplex papers are also available from Thilco and likewise can be "matched" in color and Print Decorating to your "functional" protective papers. Bags can be furnished punched for ventilation, tinted for ease of handling or as plain as you desire. Our bag department is at your service!



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... Are yours with Thilco PRINT-DECORATED Nursery Wraps. Numerous nurserymen throughout the country provide an extra merchandising service and good-will builder by using their PERSONALIZED nursery papers as mats or liners for protecting their customer's car interiors on pick-up deliveries. Add this to your service and see how pleasantly your customers re-act.

Yes — for just a fraction of a cent per unit more you can "sell" while you "protect" with Thilco Nursery Wraps. Any type you choose can be furnished attractively Print-Decorated with your name, trade-mark or any message you wish. Thilco Nursery Wraps come in 11 standard grades including several POLYETHYLENE wrappers to meet your every need for plant survival in storage and transit. In addition, Thilco can provide any number of paper grades and specialty bags for ordinary "over the counter" plant and flower wrappings in matching colors and print decorated identification to give you a complete package-wrapping ensemble. Write today — get the complete facts on Thilco papers.

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JUST IMAGINE! A FULL SIZE GREENHOUSE FOR \$900! SO STURDY IT WITHSTANDS VIOLENT STORMS!

For Just \$900 Materials Cost, Bill Cunningham, Owner of Cunningham Gardens, Waldron, Indiana, Built This Greenhouse of VISQUEEN Film. It Would Have Cost \$10,000 If Built Of Glass. He Saved \$9,100!

This is the third greenhouse of VISQUEEN film built by Cunningham. He framed it with arches of $\frac{3}{4}$ " thin wall conduit, set into 20" steel pipe. The pipe is buried in the ground full length. Tubing is joined by concrete reinforcing wire, giving the structure such stability it withstood violent storms last summer.

Other advantages: In addition to initial savings, you can line the interior of a glass or VISQUEEN film house with VISQUEEN film, and save up to 50% in heating costs. The near-perfect dead air space formed between an inside and outside "wall" of film, retards heat loss.

Write Now Or Use The Information Request Tag

You can replace the outside film once each year for less than the upkeep costs of a conventional greenhouse.

You save on labor, too. Plants thrive on less frequent watering required with a greenhouse of VISQUEEN film.

FOR YOUR PROTECTION: Be sure you get VISQUEEN film, marked every foot with the trademark VISQUEEN to protect you against imitation. Only VISQUEEN film comes in seamless widths through 32' for easier handling. Only VISQUEEN film gives you the superior uniformity of thickness that means greater strength.



VISQUEEN film—first and foremost polyethylene film. A product of the long experience and outstanding research of

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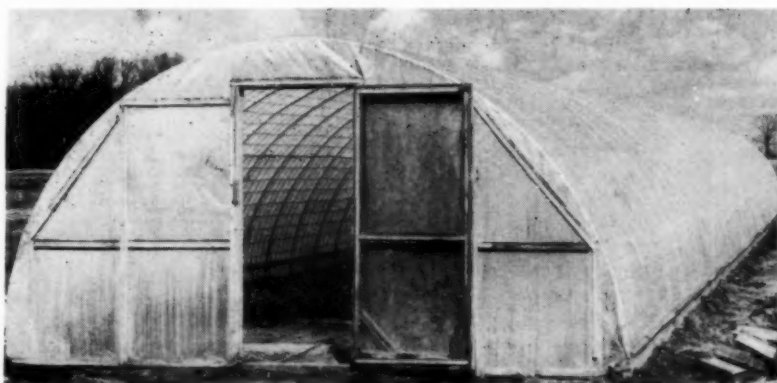


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HOUSE IN
THE FALL
AND WINTER



◀ A SHADE
HOUSE IN
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AND SUMMER

Mr. W. Cunningham of Cunningham Gardens, Inc., Waldron, Ind., designed and constructed this house 3 years ago.

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Complete with Automatic Ventilation for Less than \$900.

- **SAVES** LABOR-HANDLING
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- **LONGER LIFE** REINFORCED BY RUSTPROOF WIRE

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PLASTIC HOUSE BEFORE YOU BUY ANY GLASS OR PLASTIC HOUSE**

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Here they are! A great array of outstanding Star Rose varieties . . . every one of them a sure money-maker for you! All America knows the high quality of Star Rose introductions. That's why public acceptance is so high and why our new rose introductions sell so sure and easy. Why not let them make profits for you? Read about these sales-makers and then get in touch with your favorite grower, or write us.

MEET THE GREAT **NEW** PINK PEACE

Great because it's a wonderful grower with big, fragrant blossoms of deep,



dusty-pink. Pink Peace has everything, including the same tremendous appeal which made its ancestor, Peace, famous. There is nothing like it! The picture at the left tells only half the story . . . but we're telling all in full color in our national consumer advertising! Let Pink Peace head your sales parade—and be sure to take advantage also of the exceptional pulling power of the Star Rose introductions listed below.

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PENNA.**
GROWERS OF WORLD-FAMOUS STAR ROSES

COVER ILLUSTRATION

Tilia Moltkei

The linden, often called lime tree, basswood or whitewood, is represented by about 30 species in the temperate regions of North America south to Mexico (it is not found in western North America) and in Asia south to central China and southern Japan. All species are hardy from zone 3 southward and make good growth in a wide range of soil conditions, but are partial to rich, moist situations. They are trees of good habit, with leaves mostly dark green, alternate, slender-stemmed, toothed and about two and



Foliage of Tilia Moltkei

one-half inches wide on *T. cordata*, the little-leaved linden, to from three to five inches on *T. platyphyllos*, the large-leaved linden, and asymmetrically cordate at the base.

The lindens are well-shaped trees, excellent for shade or meadow specimens, and are much used in Europe for street and avenue plantings. The small, yellowish-white flowers are borne in drooping cymes a few inches across; they are fragrant, and their abundance of nectar attracts many bees.

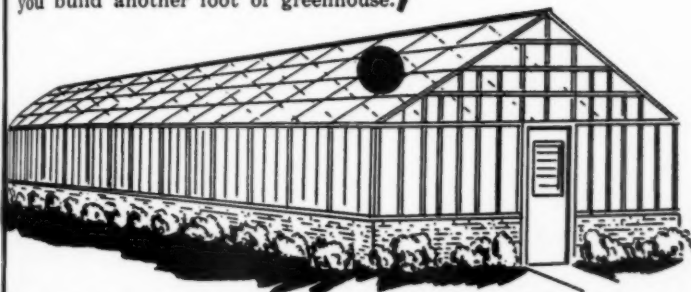
Tilia moltkei, sometimes known as the bee tree, is a hybrid of *T. americana* and *T. petiolaris* and is a handsome, good-size tree similar to *T. americana* in woody structure, save that the branches are more pendant, which gives this form a graceful appearance. The leaves of *T. moltkei* are dark green above, slightly grayish and tomentose beneath, and about four to six inches

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...and it had to come from a leader in the field of growers textiles and plastics. NOW, we are proud to present

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a tough durable plastic that will give years of service...at LOWER-THAN-EVER PRICES. AMEREX U-V tops 'em all. You'll want to know all about this clear, all new wonder plastic before you build another foot of greenhouse.



Made in 8 mil and 12 mil weights, 36," 42" and 50" wide; any length rolls you want. Write, wire or phone today for samples, prices and greenhouse construction information.

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for 16" centers

42" WIDE
for 20" centers

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per M sq. ft.

QUANTITY
Less than 50 M sq. ft.

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per M sq. ft.

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per M sq. ft.

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ALL SIZES—Stock widths 6, 10, 12 and 20 ft.

Also Sewed to Any Multiple Width or Length Desired

COLOR	CALCULATED SHADE	ACTUAL SHADE	PRICES PER SQ. YD.
Green	46%	47%	26½¢
"	52%	51%	28½¢
"	67%	57%	29½¢
"	73%	63%	34½¢
"	81%	73%	37½¢
"	90%	76%	39½¢
12 x 12 Natural	26%	18%	28¢
18 x 14 Natural	32%	27%	38¢

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—Mark Sumida, Ontario, Oregon

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"Vapam soil fumigant," he reports, "controls fusarium like magic. It also cuts costs because it destroys weed seeds before they can sprout."

"I make more money both ways," remarks Sumida. "I not only harvest more high-quality bulbs, but my hand-weeding costs are next to nothing."

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mixes. Vapam destroys nematodes . . . fungi . . . and other soil diseases. It penetrates deeply, uniformly to wipe out sub-surface pests.

You can apply Vapam with an injector, a bedder or a rotary tiller. Or you can introduce it into irrigation systems or overhead sprinklers. It's mighty economical, too.

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long and toothed, broadly ovate and cordate to truncate at the base.

While not too particular as to growing conditions, the lindens do suffer from prolonged dry spells, especially when poorly situated. The fall color is usually clear yellow and is especially fine in *T. petiolaris*, though not outstanding in other species. As a genus, the lindens are clean trees, without objectional litter of fallen flowers or fruit. They are free from attack by insect pests or serious disease infection. As street trees, lawn or shade specimens, the lindens give many years of highly satisfactory service. J. G.

FALL WEED CONTROL

[Continued from page 14]

best chemical to use, since the treatment time using it is comparatively short. Methyl bromide (trade names are MC-2, Dowfume, Pestmaster Soil Fumigant) may be injected under an airtight tarp, at the rate of one pound per 100 square feet, for weed control, or at the rate of four pounds per 100 feet for disease control. The tarp should cover the soil for 24 hours after the injection, and then the soil should be aerated for 48 hours before being used.

Vapam, Chem-vape, or VPM are other types of chemicals that have proved effective in recent years. Nurserymen should mix one quart of one of these chemicals or ¾ pound with 15 gallons of water and sprinkle this 15¼ gallons of solution evenly with a sprayer or through the irrigation pipes over 100 square feet of seedbeds.

Immediately after this, the soil should be wet with 10 to 20 gallons of water per 100 square feet. In this operation, any standard spray or irrigation rig may be used. The chemicals cost only 1½ cents per square foot of acreage to be treated. The soil should not be disturbed for at least six days. After a thorough raking with a steel rake, it should be allowed to aerate before it is used for planting nursery stock.

Granular calcium cyanamide has limited possibilities in nursery seedbed operations. It has two limitations in that it raises the pH of the soil and also adds nitrogen, but this might be an advantage for some nursery stock. Fifty to 60 pounds per 1,000 square feet is suggested. The best method is to apply one-half of the amount and rototill this in and then put the other half over the top and rake it in lightly. Then keep a water seal on for two to three weeks. The soil may then be raked and nursery stock put in the frames. The

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commoner practice on Long Island, is to put both amounts of the material on in the fall and give a 2-week water seal; wait until the following spring, rake the soil and give a heavy leaching. When the soil is dried out sufficiently, the nursery stock is planted.

HERBICIDE TESTS

[Continued from page 10]

no water seal was applied. Perfect weed control resulted at both rates, but some growth inhibition of asters was evident at the 20-pound rate. This experimental chemical will have to be tried under other conditions before its use can be suggested.

Weed Control in Mixed Stock

Several representative species of nursery stock such as *Euonymus alatus compactus*, *Ilex crenata convexa*, *Juniperus chinensis pfizeriana*, *Rhododendron calendulaceum* and *Taxus cuspidata* were the test plants in the next experiment. Karmex DW at one-half, one and two pounds per acre; Karmex N at four pounds per acre, and Simazine at two and four pounds per acre were the chemicals used. All chemicals were applied May 26, but only Simazine at four pounds per acre was still holding, while the other treatments were re-applied, on July 18.

Ilex crenata convexa has proved to be sensitive to the urea-type herbicides, Karmex DW and Karmex N, at all rates by showing chlorosis of the leaves. Two pounds of Karmex DW has caused chlorosis in the yews. A few of the azaleas and some of the euonymus show chlorosis after the application of Simazine at four pounds per acre.

Rates of eptam and Simazine higher than necessary for weed control are being tried on a block of junipers and yews to determine plant injury. Eptam at five, 10 and 15 pounds per acre and Simazine at four, six, eight and 10 pounds per acre are being used in this experiment. At least two applications at the foregoing rates were used last year. In the spring the plants were lifted for root pruning and the ground was prepared with a Rototiller, which mixed residual chemicals into the root zone. May 19, the first application of this season was made; thus these plants have received up to 45 pounds of eptam and 30 pounds of Simazine per acre without appreciable effect on growth and color.

A group of plots in which experiments in the effects of soil moisture and cultivation on the carbamate herbicides were being conducted



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
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by Dr. John Havis, head of the Wal-tham field station, were the last viewed. Chloro IPC, eptam, Mylone and Vegedex were used at eight pounds per acre.

In the first experiment, half the soil was dry and half was wet at the time of application. Half of each plot was cultivated to incorporate the herbicides into the upper two inches of soil. Eptam or Vegedex applied to dry soil and cultivated in gave the best weed control. Chloro IPC would also have rated high except that one type of weed, henbit (*Lamium amplexicaule*), took over the plots treated with this material. Cultivation reduced the effectiveness of Chloro IPC. Eptam applied to wet soil did not control the weeds. Mylone at eight pounds per acre was not herbicidally effective.

In the next experiment the soil was dry when the chemicals were applied. Half the plots received one inch of water after treatment, to determine whether this reduced the effectiveness of eptam. Eptam or Vegedex not cultivated but irrigated produced the best results. Next best results were eptam cultivated and not irrigated and Vegedex cultivated and irrigated.

Demonstrations of application of methyl bromide and Vapam or VPM, of application of liquid herbicides with a knapsack sprayer equipped with a boom-jet nozzle and application of granular herbicides followed the field tour. The granular herbicide spreader is a Cyclone seeder, modified to operate from one large wheel.

Conclusions

The most promising herbicides for long residual effects in established stock are Karmex DW at one-half and one pound per acre and Simazine at two and four pounds per acre. These rates are in terms of the amount of active ingredients.

Granular eptam at 10 pounds per acre of actual eptam rototilled into the soil was the most effective preplanting herbicide in this year's trials. Methyl bromide was slightly more effective herbicidally than Mylone or Vapam or VPM, but was more difficult to use.

Sugar-cane bagasse was somewhat more effective than granular Chloro IPC in controlling the residual weeds after using a preplanting herbicide. Of the carbamate herbicides, Vegedex was least influenced by soil moisture. Eptam was effective only where the soil surface was dry at the time of application. Cultivation following application generally improved the effectiveness of eptam and Vegedex but reduced that of Chloro IPC.

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No. 1	6½ ins.	6 ins.	7 ins.	100	340 lbs.	\$4.25	\$40.00	
No. 2	9½ ins.	7 ins.	8 ins.	100	535 lbs.	5.25	50.00	
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						25 pots, \$7.70; 50 pots, \$14.60; 75, \$21.75; 100, \$26.15; 1000, \$231.00		
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THIS BUSINESS OF OURS

Reflections on the Problems of Nurserymen

By E. Sam Hemming

WET SEASON

Last year Maryland suffered from serious drought, while this year the weather has been far too wet. In July there were 12 inches of rain, evenly spread through the month, a record for the Maryland area. The past winter we had two 17-inch snows, and excess precipitation continued through the spring and summer to date. Though I can recall a hurricane that missed us, its fringe giving 17 inches of rain in three days, this is the first time I have seen an excess of rainfall continue completely through a growing season. Curiously, the effects of the condition on the business seem to be nearly all good.

The continued rains made it much easier to finish late spring planting that had been delayed by snow and freezing weather. This planting was completed without any losses of consequence, even though soft new growth was on the deciduous plants. After a little hesitation, far more summer landscaping came in than we ever had before. This may have been because some customers became impatient to finish a job, while others who had hesitated to take on additional financial burdens during the recent recession decided it would not be serious.

The plants we sold included most kinds. Deciduous trees were moved with a ball; some with benefit of Wilt-Pruf, others without. There was virtually no trouble. About the only difficulty came from cultivated slopes that washed before the soil settled and the ground covers could take hold. Sometimes the soil in the nursery was too soft for good balls. Grass seed sown the first week in August came up beautifully in a week.

Weeds Troublesome

In the nursery the only difficulty was the weeds. It has been hard to cultivate to keep them down. The rainfall has been so regular that beds of small plants have not had to be watered once. The only plants that have needed extra watering have been potted plants in frames.

Summer lining out in the field has been easy, if the ground could be prepared. The plants hardly had time to dry out or wilt. We did use Wilt-Pruf on broad-leaved ever-

greens, but it probably was not necessary. Growth of the established plants in the nursery has been vigorous. We make a practice of giving extra nitrogen to off-color plants, and when this is done, the response is quick. Wax privet shows excellent growth.

It would be expected that with all the wet weather, flooding in poorly drained areas would cause trouble. However, winter flooding seems to cause more trouble than summer excess, although summer floods can be a nuisance if ponds are formed.

Growers concerned with a special crop rather than the production of plants are not so content with the excess rain. Farmers have been complaining that tomatoes, for instance, have not pollinated well and the plants have gone to vines rather than fruit. The same could be true of many other crops where pollination has suffered because of the excess rain. The farmers also have been

complaining that the humidity makes certain fungous diseases more severe. Fortunately, we have noticed no fungous diseases on our ornamentals. Normally at this time of year, trees that have been injured or have borers will start to show fall coloring. That has not been apparent so far.

By the end of May our volume was 15 per cent behind last year's at the same time, but at the end of August, indications were that we would be 20 per cent ahead of our volume for the same time last year.

HORTICULTURE OPPORTUNITIES

"Opportunities for You in Horticulture," an illustrated brochure of 14 pages published by Ohio State University, Columbus, is designed to give prospective horticulture students an idea of some of the requirements and opportunities in the field. As well as telling about the industry in general, the booklet gives a specific outline of required subjects for a degree in horticulture at Ohio State University. Some of the horticultural facilities at the university are illustrated, and the horticulture staff is introduced pictorially.

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15 ins.	2.00	15 ins.	2.00	15 ins.	2.00
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Coral Bells		Louise Gable		Polaris	
6 ins.50	6 ins.75	8 ins.75
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Hinodegiri		Rose Bud		Beethoven	
Our Hinos are very dark red.		6 ins.75	6 ins.50
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8 ins.75	10 ins.	1.25	10 ins.	1.00
10 ins.	1.00	12 ins.	1.50	12 ins.	1.25
12 ins.	1.25	15 ins.	2.50	15 ins.	2.00
15 ins.	2.00	18 ins.	3.50	18 ins.	2.50
18 ins.	2.50	24 ins.	6.50	20 ins.	3.50
20 ins.	3.50	Rose Greely		Johann Strauss	
24 ins.	5.00	6 ins. ....	.75	8 ins. ....	.75
30 ins.	6.00	8 ins.	1.00	10 ins.	1.00
36 ins.	7.50	10 ins.	1.25	12 ins.	1.25
Orange Beauty, Kurume		12 ins.	1.50	15 ins.	2.00
6 ins. ....	.50	15 ins.	2.50	18 ins.	2.50
8 ins. ....	.75	18 ins.	3.50	20 ins.	3.50
10 ins.	1.00	24 ins.	6.50	Lilacina	
12 ins.	1.25	Addy Wery		8 ins. ....	.75
15 ins.	2.00	6 ins. ....	.75	10 ins.	1.00
18 ins.	2.50	8 ins.	1.00	12 ins.	1.25
Hino-Crimson		10 ins.	1.25	15 ins.	2.00
6 ins. ....	.50	12 ins.	1.50	18 ins.	2.50
8 ins. ....	.75	15 ins.	2.50	20 ins.	3.50
10 ins.	1.00	18 ins.	3.50	24 ins.	5.00
12 ins.	1.25	Apple Blossom, Kurume		Kaempferi	
15 ins.	2.00	6 ins. ....	.50	Hardest of all azaleas; sheared,	
18 ins.	2.50	8 ins. ....	.75	well-budded, heavy.	
Snow		10 ins.	1.00	Othello, Salmon Beauty, Fedora and	
6 ins. ....	.50	12 ins.	1.25	Carmen.	
8 ins. ....	.75	15 ins.	2.00	8 ins. ....	.75
10 ins.	1.00	18 ins.	2.50	10 ins.	1.00
12 ins.	1.25	20 ins.	3.50	12 ins.	1.25
15 ins.	2.00	24 ins.	5.00	15 ins.	2.00
Ledifolia Alba		Daybreak, Kurume		18 ins.	2.50
6 ins. ....	.50	6 ins. ....	.50	20 ins.	3.50
8 ins. ....	.75	8 ins. ....	.75	24 ins.	5.00
10 ins.	1.00	10 ins.	1.00	30 ins.	6.00
12 ins.	1.25	12 ins.	1.25	36 ins.	7.50
15 ins.	2.00	15 ins.	2.00		
18 ins.	2.50	18 ins.	2.50		
20 ins.	3.50	20 ins.	3.50		
24 ins.	5.00				

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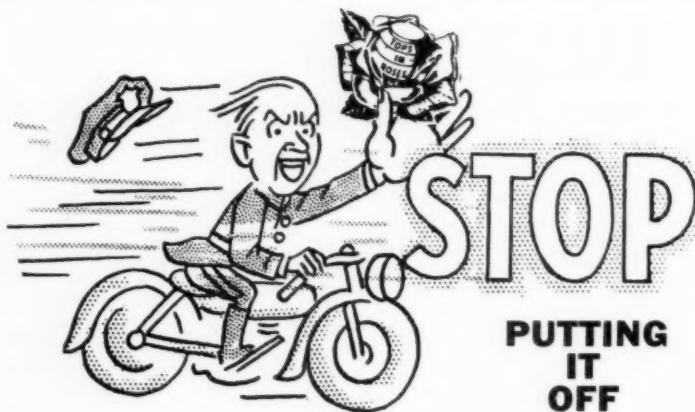
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OBITUARY

Howard C. Taylor

Howard C. Taylor, a past president of the American Association of Nurserymen and president and owner of Rosedale Nurseries, Inc., Hawthorne, N. Y., died August 15 at a Peekskill, N. Y., hospital of injuries sustained in an automobile accident resulting when he suffered a stroke at the wheel of his car. He was 55. Mr. Taylor was also the first president of the New York State Nurserymen's Association, which he helped to found in 1943, and was a past president of the Westchester County Retail Nurserymen's Association.

Born at Lagrangeville, N. Y., Mr. Taylor was graduated from Alfred University, Alfred, N. Y., and joined the Rosedale Nurseries in 1925. In 1930 he became owner and operator of the business. He was president also of Nursery Specialty Products, Inc., Croton Falls, N. Y.

He served in many capacities on committees and as committee chairman in the A. A. N. He was elected to the association's executive committee in 1944 and served continuously as a member of the committee and of the board of directors until 1950. He was A. A. N. treasurer for three of these years and served as president for the year 1948-49.

A member of the board of education of North Tarrytown, N. Y., Mr. Taylor was consultant on nursery education matters with the faculty of Cornell University and with the Long Island Agricultural and Technical Institute. He was a member and past president of the Rotary Club of Pleasantville, N. Y., and engaged in many local community services. Survivors include his widow, Mrs. Clarisa Powers Taylor; two sons, C. Powers Taylor and H. Robert Taylor; a daughter, Mrs. Catherine T. Caparelli, and three brothers.

J. D. Hensley

J. D. Hensley, owner of Roxana Gardens, Marietta, Ga., died of a heart attack July 24. As well as being operator of a nursery, he had been an importer of seeds and plants from foreign countries. A Fellow of the Royal Horticultural Society, London, England, Mr. Hensley was also a member of the American Horticultural Society, the American Horticultural Council, the American Society of Florists and Ornamental Horticulturists, the Pennsylvania

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JUNIPERUS CHINENSIS
 Columnaris, Blue
 Columnaris, Green
 Pfitzeriana
 Pfitzeriana aurea
 Pfitzeriana, silver-blue
COMMUNIS DEPRESSA PLUMOSA
 (Andorra)
KOSTERI PLUMOSA
SABINA
SABINA TAMARISCIFOLIA
SABINA VONEHRON
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SCOPULORUM
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 Cologreen
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 Platinum (Plant Pat. No. 1070)
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	Each
4 to 5 ft.	\$2.50
Ilex bullata, densely sheared	
18 to 21 ins.	2.50
21 to 24 ins.	3.00
2 to 2 1/2 ft.	3.50
Ilex crenata,	
Ilex fortunei,	
Ilex crenata microphylla	
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21 to 24 ins.	3.00
2 to 3 ft.	3.50

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AZALEA JAPONICA. Very hardy. Wide range of color. Red, pink, yellow, etc. Deciduous. 6 to 8 ins. T. \$25.00 per 100

AZALEA KAEPPFERI. Seedlings (Japanese seed). Tall-growing, large flowers in various shades of pink and red. Flowers profusely; blooms when evergreen types fail. Deciduous. 4 to 6 ins. T. \$15.00 per 100

AZALEA KURUME. Very hardy. Will stand 19 degrees below zero. Gives a great variety of colors and types from choice whites to orchids, deepest pinks and reds. Good evergreen foliage. 2-yr. T. 4 to 8 ins. \$15.00 per 100

AZALEA POUKHANENSIS. Large orchid flowers which rarely winterkill. Deciduous. 4 to 6 ins. T. \$15.00 per 100

AZALEA SCHLIPPENBACHI. Considered by many the best azalea of all. Very large pink flowers; very large leaves which turn pink in fall. Deciduous. 4 to 6 ins. T. heavy \$25.00 per 100

AZALEA WHITE. Evergreen. Large flowers with a pink blush in throat similar to but much hardier than Azalea Indica Alba. 4 to 8 ins. T. \$15.00 per 100

LEUCOTHOE CATESBAEI

A good broad-leaved evergreen that grows in dense shade. Lily-of-the-Valley-like flowers, reddish-bronze foliage in winter. Contrasts well with Azaleas and Rhododendrons. Fine for flower arrangements.

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Horticultural Society, the Massachusetts Horticultural Society and the Men's Garden Club of Marietta.

He is survived by his widow, Claudia; two daughters, three sons, and three stepsons. The nursery, which he operated together with his wife, will discontinue operations.

James P. Taylor

James P. Taylor, Sr., 91, part owner of the former Taylor Nursery, Greer, S. C., until his retirement in 1940, died at the home of his brother, W. C. Taylor, at Cedar Mountain, N. C., August 21. The name of the firm became Greer Nursery after Mr. Taylor's retirement. He was credited with being the first man to plant a peach tree for commercial purposes in upper South Carolina and the first to cultivate an orchard from which the fruit was shipped. Surviving are his widow, Bernice Willis Taylor; six sons; two stepsons; a brother, and a sister.

Mrs. W. R. Gillespie

Mrs. Ina Cook Gillespie, wife of William Roy Gillespie, Gillespie Nurseries, Taylors, S. C., died recently after a 3-week illness. She was associated for many years with her husband in the operation of the nurseries. Rock gardens were her especial interest. She is survived by her husband and three sisters.

WASHINGTON CONVENTION

[Continued from page 9]

been held on the idea, and the hope is that point-of-origin inspections can eventually be made, doing away with the costly and cumbersome system of duplication which now exists. He touched on the proposed rules for this sort of program; any such program adopted would be subject to the quarantine regulations of each state.

The noon luncheon August 22 was a buffet, sponsored by the Washington A. A. N. chapter. Jack Van Well, chapter president, who was in charge of the meeting, first called on Paul Van Allen, Portland Wholesale Nursery Co., Portland, Ore., to introduce the Oregon nurserymen present and then introduced other visitors.

L. H. "Bud" McGuire, Puget Sound Nursery, Tacoma, Wash., northwest regional director, American Association of Nurserymen, gave a fine report on A. A. N. affairs during the luncheon. He told briefly about court cases in which the A. A. N. was involved and urged nurserymen to take advantage of the association's new film on the use of nursery stock. United States coun-

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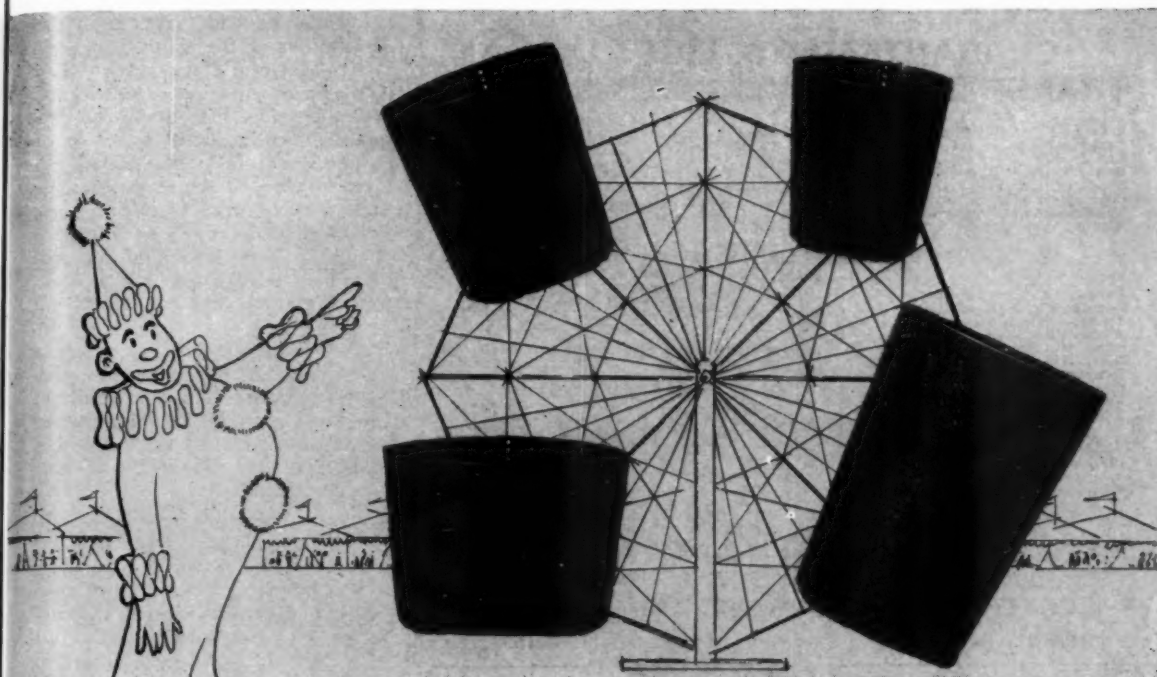
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Scotch Pine, 3-yr. transplants, (2-1), 3 to 6 in.	70.00
White Pine, 4-yr. transplants, (2-2), 4 to 8 in.	70.00
Black Hills Spruce, 5-yr. transplants, (2-3), 5 to 10 in.	85.00
Colorado Blue Spruce, 5-yr. transplants, (2-3), 6 to 12 in.	150.00
Engelmann Blue Spruce, 4-yr. transplants, (2-2), 4 to 8 in.	75.00
Norway Spruce, 4-yr. transplants, (2-2), 4 to 8 in.	70.00

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(not guaranteed)

Douglas Fir, 4-yr. seedlings (4-0), 6 to 12 in.	40.00
Douglas Fir, 3-yr. seedlings (3-0), 3 to 6 in.	35.00
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Black Hill Spruce, 3-yr. seedlings (3-0), 3 to 6 in.	30.00
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White Spruce, 3-yr. seedlings (3-0), 5 to 10 in.	35.00

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90 per cent of all transplants sold at regular wholesale prices as quoted in this list are guaranteed to live. Replacements will be made free of charge for any losses in excess of 10 per cent of the number purchased, provided we are notified of such losses by October 1, 1959. (Seedlings not guaranteed.)

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	Per 100	Per 1000	5000 or more
Strong, well-rooted, 1-yr. plants; propagated in soil and peat frames with light shade...	\$6.00	\$50.00	\$47.50

Available for prompt shipment throughout the year. Shipments anywhere including Canada. GOOD PACKING FREE. A good source of supply.

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ty agents, he said, will aid in the distribution of the film.

Mr. McGuire called attention to increased benefits under the A. A. N. insurance plan. He reminded the group, however, that, regardless of its fine work, the A. A. N. does not take the place of the state organization, nor vice versa. It is not a question of whether one can afford to belong to both state and national organizations, he said, but a question of whether one can afford not to belong.

Sam Walters, who was an alternate to the A. A. N. convention, gave a few words of review concerning the program. John Hill, representing the chamber of commerce of Longview, told about the history and background of the city.

The afternoon of August 22 was devoted to two main events. One was a golf tournament and the other was a tour of the Weyerhaeuser Timber Co., which was thoroughly enjoyed by everyone who participated. A dinner abounding in good-fellowship, good food and fun was held in the hotel that evening. Dancing followed, and during the evening Richard R. Williams, Puget Sound Nursery, Tacoma, was presented with a certificate of honorary membership in the W. S. N. A. Mr. McGuire and Mrs. Bryan Taylor won the low gross golf awards for the tournament. The Washington golf team won the trophy over the Oregon golf team for team play.

Bylaw Change

The business session was again led by President Bryan Taylor on the second day. A major bylaws change approved by the assembly concerned the election of officers. Under the changed bylaw, the chapters will hold elections in December for a list of candidates submitted by a state nominating board in November of each year. The results of the vote in each chapter will then be tabulated at the state convention in January and the results made known.

It was announced that Miss Leonette Bassett, Seattle, Wash., had been appointed secretary of the state association, to take office September 1, 1958. Mrs. Lenora Walters, secretary of the W. S. N. A. for many years, had resigned as of that date. At a short meeting of the Washington chapter of the A. A. N. led by President Jack Van Well, Stan Walters was elected for a 2-year term as delegate of the A. A. N. Mr. Walters owns Walters Nursery, Puyallup. Bryan Taylor was elected as his alternate. W. M. Steward, editor of *Balls and Burlaps*, was lauded for his ac-

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Ludlow's poly-coated Nursery-Wrap is specially made to give you new low-cost protection for the plants, shrubs or bushes that you ship or mail from your nursery.

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	Each 10 rate	Each 100 rate
15 to 18 ins., B&B	\$3.50	\$3.00
18 to 24 ins., B&B	5.00	4.50
2 to 2½ ft., B&B	7.00	6.50
2½ to 3 ft., B&B	8.00	7.50

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Per 100 Per 1000

Red-leaved Barberry		
2-yr., S., 9 to 12 ins..	\$ 6.50	\$50.00
2-yr., S., 12 to 18 ins..	10.00	75.00
Row run, 9 to 18 ins..	7.50	60.00
Cornus florida (White Dogwood)		
1-yr., S., budding size.	6.00	50.00
1-yr., S., below budding size	4.50	35.00

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Rhododendron • Kalmia • Azalea

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complishment in bringing nine new members into the A. A. N. during the year.

Panel on Stock, Prices

A panel discussion concerning stock available for the fall, prices, etc., occupied most of the rest of the program. Serving on the panel were James Doty, Doty & Doerner, Portland, Ore.; Wayne McGill, A. McGill & Son, Fairview, Ore.; Winsor Bond, and Harold Wells, Wells Nursery, Mount Vernon, Wash. Acting as moderator was President Taylor.

As the discussion opened, it was agreed that not too many field-grown camellias were produced this year, but that smaller sizes were in fair supply. Espalier items, the panel agreed, were good merchandise, but short on the Washington and Oregon markets. In regard to patented azaleas, the panel felt that there is always a flurry of demand for these new plants after magazine articles appear about them, but that the demand dies down rapidly.

Cherry Varieties Supplanted

Flowering cherries were next discussed. In regard to a question as to why certain varieties listed before the big freeze of 1955 were not as yet listed again, it was pointed out by the panel members that this was largely due to the fact that better varieties have now supplanted those formerly listed. Others have been dropped because of propagating difficulties.

Pat Dering, Peterson & Dering, Scappoose, Ore., was asked to comment on the rose situation. He said that the supply was good on most of the award winners. Such varieties as Sterling Silver and Lavender Girl, however, are not plentiful, it was pointed out. Regarding public opinion on floribundas, Mr. Taylor stated that he thought there are too many varieties that are too much alike.

The panel next discussed broad-leaved evergreens. It was agreed that the supply was up but that the demand was also greater. Medium sizes were said to be more plentiful than the larger sizes. The panel members agreed that the stock of broad-leaved evergreens this year was the finest that has been produced since the freeze of 1955. The panel discussed the demand for plants, which, members agreed, changes constantly with changes in architecture and in public taste. To satisfy the demands of the public, it was suggested that the average retail nurseryman should carry a wide variety of stock.

Winsor Bond suggested that the public be educated to consider nurs-

FALL, 1958, PRICE LIST

Seedlings

<i>Abies lasiocarpa</i> , 100 1000	
2-yr., S., 3 to 4 ins.	\$ 8.50
<i>Acer rubrum</i> , 2-yr., S., 10 to 15 ins.	5.00 \$ 45.00
<i>Berberis thunbergii atropurpurea</i> , 1-yr., S., 4 to 8 ins. (Special Permit)	4.50 40.00
<i>Cornus mas</i> , 1-yr., S., 6 to 8 ins.	7.50
<i>Crataegus (cordata) phaeopyrum</i> , 1-yr., S., 8 to 12 ins. and up	7.50 60.00
<i>Crataegus (cordata) phaeopyrum</i> , 2-yr., S., 18 to 24 ins. and up	10.00 75.00
<i>Hebeborus niger</i> , 2-yr., T.	45.00
<i>Koeleruteria paniculata</i> , 1-yr., S., 6 to 8 ins.	8.00
<i>Liquidambar styraciflua</i> , 1-yr., S., 4 to 8 ins.	9.00 75.00
<i>Liquidambar styraciflua</i> , 2-yr., S., 12 to 18 ins.	15.00 100.00
<i>Magnolia virginiana (glauca)</i> , 1-yr., S., 3 to 6 ins.	7.00
<i>Mahonia repens</i> , 2-yr., S., 4 to 8 ins.	7.50
<i>Myrica pensylvanica</i> , 1-yr., S., 3 to 6 ins.	5.00 40.00
<i>Picea abies (excelsa)</i> , 2-yr., S., 4 to 8 ins.	5.00 40.00
<i>Picea engelmanni</i> , 2-yr., S., 3 to 4 ins.	6.00
<i>Picea pungens glauca</i> , 2-yr., S., 4 to 8 ins.	5.00 40.00
<i>Picea pungens glauca</i> , 3-yr., T.	17.50 150.00
<i>Pinus flexilis</i> , 2-yr., S., 2 to 4 ins.	5.00 40.00
<i>Pinus flexilis</i> , 3-yr., S., 3 to 5 ins.	6.50
<i>Pinus mughus (True Dwarf Tyrolean)</i> , 2-yr., S., 4 to 4 ins.	5.00 40.00
<i>Pinus mughus pumilio</i> , 2-yr., S., 2 to 4 ins.	5.00 40.00
<i>Pinus nigra</i> , 2-yr., S., 4 to 8 ins.	4.50 40.00
<i>Pinus nigra</i> , 3-yr., S., 8 to 12 ins.	6.00 50.00
<i>Pinus strobus</i> , 2-yr., S., 4 to 6 ins.	5.00 40.00
<i>Pinus sylvestris</i> , 2-yr., S., 6 to 10 ins.	4.50 40.00
<i>Pinus thunbergii</i> , 2-yr., S., 4 to 8 ins.	6.00 50.00
<i>Pseudotsuga taxifolia glauca</i> , 2-yr., S., 4 to 8 ins.	6.00 50.00
<i>Quercus borealis</i> , 1-yr., S., 6 to 8 ins.	6.00 50.00
<i>Quercus borealis</i> , 1-yr., S., 8 to 12 ins.	7.50 60.00
<i>Quercus coccinea</i> , 1-yr., S., 6 to 8 ins.	10.00 75.00
<i>Quercus palustris</i> , 1-yr., S., 6 to 8 ins.	6.00 50.00
<i>Quercus palustris</i> , 1-yr., S., 8 to 12 ins.	7.50 60.00
<i>Sophora japonica</i> , 1-yr., S., 6 to 8 ins.	10.00
<i>Sorbus aucuparia</i> , 2-yr., T., 18 to 24 ins. and up	25.00 200.00
<i>Syringa vulgaris</i> , 1-yr., S., 6 to 8 ins.	3.50 30.00
<i>Syringa vulgaris</i> , 2-yr., S., 12 to 18 ins.	9.00 80.00
<i>Taxus capitata</i> , 3-yr., S., 4 to 8 ins.	15.00 125.00
<i>Taxus capitata</i> , 4-yr., T., 6 to 10 ins.	35.00 300.00
<i>Thuja occidentalis</i> , 3-yr., T.	10.00 85.00
<i>Thuja orientalis</i> , 2-yr. transplanted understock	8.50 75.00
<i>Tsuga canadensis</i> , T., 4 to 8 ins.	15.00 125.00
<i>Tsuga canadensis</i> , T., 6 to 10 ins.	20.00 175.00

Seedlings, Cont'd

<i>Tsuga caroliniana</i> , 2-yr., S., 3 to 6 ins.	\$10.00 \$ 75.00
<i>Viburnum carlesii</i> , 2-yr., S., 6 to 12 ins.	20.00
<i>Viburnum dentatum</i> , 1-yr., S., 6 to 8 ins.	10.00 70.00
<i>Viburnum wrightii</i> , 1-yr., S., 6 to 8 ins.	10.00 70.00

Bedded Stock 2-Year Transplants

<i>Azalea calendulacea</i> 10 to 25 100	
<i>Azalea mucronulatum</i>	\$3.00 \$25.00
<i>Azalea schlippenbachii</i>	3.00 25.00
<i>Ilex crenata convexa</i>	4.25 35.00
<i>Ilex crenata rotundifolia</i>	4.25 35.00
<i>Ligustrum Dwarf</i>	
Wintergreen	2.50 20.00
<i>Rhododendron hybridum</i> , red	3.50 30.00
<i>Rhododendron smirnowi</i> x	
Hardy Hybrid	3.50 30.00
<i>Taxus cuspidata densiformis</i>	4.75 40.00
<i>Taxus cuspidata F & F compacta</i>	4.75 40.00
<i>Taxus media browni</i>	4.75 40.00
<i>Taxus media Halloran</i>	4.75 40.00
<i>Taxus media hicksi</i>	4.75 40.00
<i>Taxus media Moon's columaris</i>	4.75 40.00
<i>Taxus media wardi</i>	4.75 40.00

Well-Established Cuttings from 2 1/4-in. Pots

<i>Azalea palustrina</i> 10 to 25 100	
<i>Azalea Sherwood</i> , red	\$3.00 \$20.00
<i>Berberis julianae</i>	3.50 25.00
<i>Berberis thunbergii atropurpurea</i>	3.50 25.00
<i>Berberis triacanthophora</i>	3.50 25.00
<i>Berberis verruculosa</i>	3.50 25.00
<i>Buxus handsworthii</i>	3.00 20.00
<i>Buxus koreana</i>	3.00 20.00
<i>Buxus sempervirens</i>	3.00 20.00
<i>Chamaecyparis Cyano Viridis</i>	3.00 20.00
<i>Chamaecyparis plumosa aurea</i>	3.00 20.00
<i>Chamaecyparis plumosa sulphurea</i>	3.00 20.00
<i>Cotoneaster adpressa praecox</i>	3.00 20.00
<i>Cotoneaster conspicua</i>	3.00 20.00
<i>Cotoneaster decidua</i>	3.00 20.00
<i>Cotoneaster horizontalis</i>	3.00 20.00
<i>Cotoneaster horizontalis perpusilla</i>	3.00 20.00
<i>Euonymus alatus compactus</i>	3.00 20.00
<i>Euonymus carrierei</i>	3.00 20.00
<i>Euonymus japonicus</i>	3.00 20.00
<i>Euonymus patens</i>	3.00 20.00
<i>Euonymus vegetus</i>	3.00 20.00
<i>Ilex aquifolium Ciliata Major</i>	5.00 40.00
<i>Ilex cornuta burfordii</i>	4.00 30.00
<i>Ilex crenata convexa</i>	3.00 20.00
<i>Ilex crenata helleri</i>	3.00 20.00
<i>Ilex crenata microphylla</i>	3.00 20.00
<i>Ilex crenata rotundifolia</i>	3.00 20.00
<i>Ilex glabra</i>	3.00 20.00
<i>Ilex opaca</i> (4 to 6 ins. in the following named varieties)	5.00 40.00
Arden	
Cheerful	
Christmas Tide	
Clark	
Della Bradley	
Farage	
Femina No. 16	
Hedge Holly	
<i>Ilex opaca</i> Arden, fruited	6.00 50.00
<i>Ilex opaca mascula</i>	5.00 40.00
<i>Ilex opaca mascula Brown No. 9</i>	5.00 40.00
<i>Juniperus depressa plumosa</i>	3.00 20.00

1-Year Grafts from 2 1/4-in. Pots

<i>Acer palmatum atropurpureum</i> 10 to 25 100	
Bloodgood	\$ 8.50 \$75.00
<i>Acer saccharum monumentale</i>	10.00 90.00
<i>Cornus florida pendula</i>	8.50 75.00
<i>Cornus florida rubra</i>	7.50 65.00
<i>Cornus florida rubra Prosser</i>	8.50 75.00
<i>Cornus kousa chinensis</i>	7.50 65.00
<i>Fagus sylvatica asplenifolia</i>	8.50
<i>Fagus sylvatica fastigiata</i>	8.50
<i>Fagus sylvatica heterophylla</i>	8.50
<i>Fagus sylvatica riversi</i>	7.50 65.00
<i>Fagus sylvatica Tricolor</i>	9.00
<i>Hamamelis mollis</i>	7.50 65.00
<i>Ilex opaca Cheerful</i>	8.50 75.00
<i>Ilex opaca Hookstraw</i>	8.50 75.00
<i>Juniperus scopulorum</i>	
Blue Haven	7.50 65.00
<i>Magnolia conspicua</i>	10.00
<i>Magnolia cordata</i>	9.00
<i>Magnolia rustica rubra</i>	8.50 75.00
<i>Magnolia sieboldii parviflora</i>	8.50
<i>Magnolia soulangeana</i>	8.50 75.00
<i>Magnolia soulangeana leneel</i>	9.00
<i>Magnolia soulangeana nigra</i>	8.50 75.00
<i>Parrotia persica</i>	7.50 65.00
<i>Pinus cembra</i>	8.00
<i>Pinus sylvestris watereri glauca</i>	8.00
<i>Tsuga canadensis sargentii pendula</i>	7.50 65.00

<i>Juniperus horizontalis</i> 10 to 25 100	
Bar Harbor	\$3.00 \$20.00
<i>Juniperus horizontalis wilsoni glauca</i>	3.00 20.00
<i>Juniperus pfitzeriana</i>	3.00 22.50
<i>Juniperus pfitzeriana compacta</i>	3.00 22.50
<i>Juniperus pfitzeriana nana</i>	3.00 22.50
<i>Juniperus glauca hetzi</i>	3.00 20.00
<i>Mahonia bealei</i>	3.00 22.50
<i>Oxydendrum arboreum</i>	3.00 22.50
<i>Pieris floribunda</i>	3.00 20.00
<i>Pieris japonica</i>	3.00 20.00
<i>Prunus laurocerasus schipkaensis</i>	3.50 30.00
<i>Pyracantha coccinea lafandl</i>	3.00 20.00
<i>Pyracantha coccinea, red</i>	3.00 20.00
<i>Pyracantha wyatti</i>	3.00 20.00
<i>Rhododendron wilsoni</i>	5.00 40.00
<i>Sarcococca hookeriana humilis</i>	3.00 20.00
<i>Taxus baccata repandens</i>	3.50 25.00
<i>Taxus cuspidata</i>	3.50 25.00
<i>Taxus cuspidata aurea</i>	3.50 25.00
<i>Taxus cuspidata capitata</i>	3.50 25.00
<i>Taxus cuspidata compacta</i>	3.50 25.00
<i>Taxus cuspidata densiformis</i>	3.50 25.00
<i>Taxus cuspidata F & F compacta</i>	3.50 25.00
<i>Taxus cuspidata nana</i>	3.50 25.00
<i>Taxus media browni</i>	3.50 25.00
<i>Taxus media cliftoni</i>	3.50 25.00
<i>Taxus media Halloran</i>	3.50 25.00
<i>Taxus media hatfieldi</i>	3.50 25.00
<i>Taxus media henryi</i>	3.50 25.00
<i>Taxus media hicksi</i>	3.50 25.00
<i>Taxus media Moon's columaris</i>	3.50 25.00
<i>Taxus media Vermeulen</i>	3.50 25.00
<i>Taxus media wardi</i>	3.50 25.00
<i>Thuja occidentalis globosa</i>	
Howe Type	3.00 20.00
<i>Thuja occidentalis globosa novum</i>	3.00 20.00
<i>Viburnum bitchluense</i>	3.50 25.00
<i>Viburnum fragrans</i>	3.50 25.00

HESS' NURSERIES

P. O. BOX No. 128, Wayne, N. J.

ery plants as expendable materials to be used for a single season, or at best for a few seasons, just as annuals and perennials are used. He suggested that rotation or changing of plants should be encouraged. Ray Burr was asked to comment on the situation in California. He said that more and more stock is being moved through outlets other than nurseries. He also said that bread-and-butter items are in more demand than unusual plants. The panel closed its discussion with a note on items that

are grown in limited quantity to meet special demands. The panel members agreed that the only answer to this problem is to ask more money for such special items.

John Snyder, Columbia & Okanogan Nursery Co., Wenatchee, was asked by President Taylor to report on the nursery improvement program. Mr. Snyder said that as a result of fruit growers' demands for better certification, an extensive program to accomplish this purpose was recently outlined at a meeting of

fruit growers and state agricultural representatives. There is, said Mr. Snyder, a lack of funds to accomplish the work needed for the certification program.

Following his suggestion, the W. S. N. A. members voted to endorse an increase in license fees for Washington nurserymen, should the state find such a move necessary. The W. S. N. A. meeting drew to a close with lunch on Saturday, August 23. Many members remained, however, to enjoy another afternoon of golf.

Design, Street Trees, West Virginia Topics

By W. A. Fortney

The West Virginia Nurserymen's Association held its summer meeting August 6 to 8 at West Virginia University, Morgantown. Registration the first day at Mont Chateau on Cheat lake was followed by an evening meeting.

The new officers elected August 8 were President, Al Peters, Conner & Amos, Charleston; vice-president, Paul Broyles, Princeton, and secretary, F. Waldo Craig, West Virginia state department of agriculture, Charleston.

Ralph Kittle presented the results of a recent study on street trees for planting under utility lines. He stated that for such purposes trees cannot be over 35 feet in height and this factor alone eliminates most of the common forest trees. Large trees interfere with street lighting, make traffic lights difficult to see, disrupt sidewalks and clog sewer lines.

Careful study of available information resulted in the recommendation of the following trees for street use: *Acer campestre*, *Acer rubrum fastigiatum*, *Acer rubrum pyramidalis*, *Scalton*, *Acer spicatum*, *Carpinus caroliniana*, *Carpinus tschonoskii*, *Cercidiphyllum japonicum*, *Cornus florida*, *Crataegus oxyacantha pauli*, *Crataegus phaenopyrum*, *Koeleruteria paniculata* and *Oxydendrum arboreum*.

Walter Gumbel, Monongahela Power Co., stressed the need for appropriate street trees, pointing out the heavy financial burden of tree pruning and removal both to power companies and to municipalities. He added that proper choice of street trees was essential not only from the aesthetic viewpoint but also from the standpoint of cost.

Thursday Session

The Thursday morning session was opened with an official welcome by Dr. Roy Kottman, dean of the college of agriculture, forestry and home economics, West Virginia University. He emphasized the willingness of the university to help the nurserymen with their problems.

Dr. A. H. VanLandingham, assistant dean and director of the college of agriculture, gave a report on strip mining operations and laws in West Virginia. Dr. VanLandingham

reported that a bond of \$500 per acre must be posted by the mining company. The law requires the area to be backfilled, drained, graded and replanted with grass, trees, shrubs or vines. Once the seeding or replanting is done, the bonds are released, and such plantings may or may not succeed. Dr. VanLandingham suggested that laws should be modified to hold bonds for one year after seeding to insure better covers on such lands. Since 1945 only 0.8 per cent of the mining companies have defaulted and forfeited their bonds to the state.

Raymond P. Korbobo, extension specialist at Rutgers University, New

Brunswick, N. J., spoke on landscape design for home grounds and public buildings. He stated that many of the elements of the American style of design are patterned after features of ancient Egyptian gardens. Foundation plantings should be restrained, dignified and in keeping with the nature of the house and neighborhood. Plants should not be placed indiscriminately about the foundation, but should be located at the vertical axes of the building. Using these as a guide, one should place plants at the corners of the house and at each side of the entrance. Plants should be taller at the corners of the building and lower at the entrance, so that a funneling of interest is achieved. Trees are used to frame the front of the house and to increase the effectiveness of the funneling action achieved in the foundation planting.

Mr. Korbobo stated that the lot must be divided into three main areas. These areas include the pub-

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<i>Picea pungens glauca kosteriana</i>	1.00
<i>Picea pungens glauca HOOPSI</i> (Much more silvery-blue than <i>Kosteriana</i>)	1.25
<i>Picea orientalis</i> , beautiful evergreen	1.25
<i>Abies nordmanniana</i>	1.25

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Berberis thunbergii	Juniperus virginiana	Thuja occidentalis elegantissima	Each
1500 18 to 24 ins., 3-yr., T. B.R. \$0.30	36 to 42 ins. \$3.00	24 to 30 ins. \$2.00	
Berberis thunbergii atropurpurea	Taxus cuspidata	30 to 36 ins. 2.50	
1500 18 to 24 ins., 3-yr., T. B.R. .... .40	18 to 24 ins. 3.50	Thuja occidentalis Hetz's Winter Green	
Chamaecyparis plumosa aurea	Taxus cuspidata intermedia	30 to 36 ins. 2.00	
2000 15 to 18 ins. 1.50	12 to 15 ins. 3.00	36 to 42 ins. 2.75	
1000 18 to 24 ins. 2.00	18 to 24 ins. 4.00	Thuja occidentalis pyramidalis	
Chamaecyparis squarrosa veitchii	Taxus media brownii	36 to 42 ins. 2.50	
500 15 to 18 ins. 1.50	18 to 24 ins. 3.50	42 to 48 ins. 3.00	
500 18 to 24 ins. 2.00	Taxus media hatfieldii	Thuja occidentalis woodwardii	
Juniperus communis depressa	15 to 18 ins. 3.00	15 to 18 ins. 1.50	
350 15 to 18 ins. 2.00	24 to 30 ins. 4.00	18 to 24 ins. 2.00	
Juniperus excelsa stricta	30 to 36 ins. 5.50	Thuja orientalis aurea nana	
1500 15 to 24 ins. 1.50	Taxus media hicksii	(Berckmans)	
1000 30 to 36 ins. 2.50	15 to 18 ins. 2.75	18 to 24 ins. 2.00	
Juniperus glauca hetzi	18 to 24 ins. 3.00		
2400 12 to 15 ins. 1.50	24 to 30 ins. 4.00		
3200 15 to 18 ins. 1.75	Taxus media kelseyi		
2000 18 to 24 ins. 2.00	10 to 12 ins. 2.00		
2000 24 to 30 ins. 2.50	12 to 15 ins. 3.00		
Juniperus glauca hetzi, staked	Thuja occidentalis		
2100 30 to 36 ins. 2.75	36 to 42 ins. 2.75		

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lic area in front of the house, a service area usually adjoining the driveway and the private area or garden behind the house. A restrained foundation planting enables the owner to spend much more in developing the private areas of his grounds, which are larger and more elaborately planted. This enables the nurseryman to sell many more plants. A customer should never be sold on the idea that the planting is done when the foundation plants are in. Attention should not be called to service features by conspicuous plantings. Mr. Korbobo emphasized that there is little difference in the basic principles of design for a home or public building.

During the afternoon of August 7, tours were conducted around the extensive new plantings at the medical center and the ornamental section of the university arboretum. Experimental plots were visited at the horticulture farm, where the nurserymen saw projects on turf management, holly and azalea breeding, geranium

NORTHERN-COLLECTED

Hemlocks, Ferns, Wild Flowers
Trees, Shrubs

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breeding, plastic mulch and herbicides. A picnic at Cooper's Rock State park concluded the day.

A business meeting opened the Friday morning session. There was a discussion of highway billboards and the possible action which the organization might take to gain legislation for their control.

A. A. N. BOARD DECISIONS

The board of directors of the American Association of Nurserymen, meeting at Dallas, Tex., prior to the opening of the annual A. A. N. convention, approved the scheduling of additional regional management conferences for owners and managers of member firms after the first

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such conference is held in October at Sagamore, in the Adirondack mountains of New York.

In further actions during the meeting, the board approved advertising rates for the new trade and supplier directory, which will be inaugurated in 1959 to replace the present badge book, and again retained James A. Horton, special counsel on federal trade commission affairs, for the coming year. The directors also approved underwriting the publication of a manuscript on flowering crab apples by Arie F. den Boer.

OPENING of a retail florists' shop on the premises of Bay Landscaping Co., Bayside, L. I., N. Y., is scheduled for early fall.

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P. O. Box 336 MILFORD, DEL.

Pennsylvanians See Conard-Pyle Fields At Summer Meeting

By Wilbur I. Nisley

Wednesday, August 13, the Conard-Pyle Co., West Grove, Pa., was host to the annual summer meeting of the Pennsylvania Nurserymen's Association. A total of 280 members and friends, representing over 100 firms, registered for the day, making this the best-attended summer meeting in the history of the association.

The entire propagating and growing facilities of the Conard-Pyle Co., grower of Star roses, were open to nurserymen and their families. Because of the possibility of rain, registration and headquarters for the day's activities were established in the company's large new shipping building, which covers approximately 20,000 square feet. Here a public address system was installed to announce events.

In the morning, guided tours were made through the company's greenhouses, container-growing area and rose fields. Various members of the staff explained such things as Conard-Pyle's system of mist propagation of evergreens, flowering material and miniature roses, of which the firm grows some 220,000 each year, as well as methods used in the field growing of between 300,000 and 400,000 roses.

The rose field tours each included between 25 and 50 visitors, who drove through the fields in their cars. Contour growing, soil improvement, propagating and disease and insect control were explained, as were the harvesting and marketing of the roses. The nurserymen seemed to be particularly interested in the four new roses—Pink Peace, Torch Song, Tapestry and Fantan—which are being introduced this fall as Star roses.

At noon, everyone gathered in the headquarters area and enjoyed a buffet lunch. After lunch, the P. N. A. president, Stanley Leighton, White-marsh Nursery, Plymouth Meeting, opened the business meeting by introducing S. B. Hutton, president of the Conard-Pyle Co., who extended a warm welcome to the members of the association. The remainder of the meeting was taken up by reports of the various conventions attended by delegates of the Pennsylvania Nurserymen's Association.

In the afternoon, a visit was made



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1300 acres devoted to the production of the finest in ornamental plants.

Featuring shade and flowering trees in wide assortment.

Flowering shrubs, hedge plants, ground covers, evergreens, azaleas, vines, etc.

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LINING-OUT STOCK

Taxus capitata, Bulk's strain	Per 100	Per 1000
3-yr., T.T., 10 to 15 ins.	\$53.00	\$500.00
Taxus cuspidata		
3-yr., T.T., 6 to 10 ins.	35.00	300.00
Taxus cuspidata, upright, seedling-grown		
5-yr., T.T., 8 to 12 ins.	55.00	500.00
Thuja occidentalis Hetz's Wintergreen		
3-yr., T.T., 12 to 18 ins.	50.00	450.00
Thuja occidentalis woodwardi		
2-yr., T., 5 to 8 ins.	32.50	275.00
Tsuga canadensis		
5-yr., T., 6 to 8 ins.	30.00	250.00

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Somerville 43, Mass.

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Vermont and Nova Scotia.
200,000 trees under cultivation.
Colorado Blue Spruce,
Douglas Fir and Scotch Pine.

SHIPPING and GRADING YARDS

Canadian Fir Balsam
Nova Scotia, New Brunswick and Quebec.
Quality pack — 55-lb. bundles.
475 bundles per carload.

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to a Standard—
Not Down to a
Price!



to the great King ranch, located between West Grove and Coatsville, Pa. On this 10,000-acre feeding station of the famous King ranch of Texas, the nurserymen were shown how the ranch fattens the Santa Gertrudis cattle that are shipped from Texas for final conditioning in the lush pastures of Chester county.

The art of glass blowing was observed during a second afternoon tour through the Pesce glass factory at Kennett Square, Pa., and at 5:30 p. m. the nurserymen assembled in the Conard-Pyle shipping building for a clambake. In the evening, those who cared to stay watched an exciting polo match at nearby Brandywine field.

CHRISTMAS TREE SURVEY

The first known inventory of the Christmas tree industry in any state in the United States was conducted in Pennsylvania during the summer of 1957 by the Pennsylvania crop re-

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Propagators and Growers
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PARAMUS, N. J.
Phone COLfax 2-5873

porting survey. Results of this survey showed that about 1,800 growers in the state had over 65,000,000 Christmas trees growing in 1957 and over 1,000,000 trees sold during the 1956 marketing season. These growers planted over 12,000,000 trees in Pennsylvania in both 1956 and 1957.

Practically all of the trees growing in Pennsylvania are in plantations, as opposed to natural stands. Christmas trees are located in every county in the state, but the largest concentrations are found in the west central and northwestern districts. The six top counties have over 2,000,000 trees each and together have 42 per cent of the state total. These counties are Indiana, Crawford, Armstrong, Erie, Jefferson and Cambria.

Choice Varieties of Lining-Out Stock

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PALLACK BROS. NURSERIES, Inc.
Route 19, 31 mi. north of Pittsburgh, Pa.
Phone: Zelienople 783
R.F.D. 1 HARMONY, PA.

Scotch pine dominates nearly every aspect of the Christmas tree industry in the state; it is the most rapid-growing species and retains its needles excellently after it is cut. About 45,000,000, or 70 per cent, of the trees growing in 1957 were Scotch pine, while nearly 800,000, or three fourths of the trees sold in 1956 were Scotch pine. Following in importance were Norway spruce, red pine and Douglas fir. The relative importance of the species is not the same in all areas of the state. Scotch pine reaches its greatest importance in the western counties, while in the eastern counties, less than one half of the trees growing are Scotch pine. In eastern areas the short-needle species are more popular than in

SEE BERRYHILL'S EVERGREENS and SELECTED SHRUBS

(300 fertile acres in west central Ohio)



Taxus Intermedia Berryhilli

Dense, slower growing, dark green foliage, hardy, wonderful sales appeal.

15 to 18 ins. \$4.25
18 to 24 ins. \$5.50



Juniperus Virginiana Keteleeri

The all-around variety of grafted Juniper.
3 1/2 to 4-ft., sheared, \$4.75



Euonymus Alatus Compactus

The best of the deciduous Euonymus Burning Bush. Cutting-grown for good fall color.

	Per 10	Per 100
4-yr., TT., 10 to 15 ins.	\$0.45	\$0.40
4-yr., TT., 15 to 18 ins. ....	.55	.50
5-yr., TT., 18 to 24 ins. ....	.75	.70
2 ft., heavy, B&B	1.60	...
2 to 2 1/2 ft., B&B	1.90	...
2 1/2 to 3 ft., B&B	2.50	...
3 to 3 1/2 ft., B&B	2.85	...

Visitors are always welcome. Come to see us or write for our catalog. Our location: 4 1/2 miles northeast of Springfield on State Route No. 4.

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Springfield, Ohio

IMPERIAL

(Plant Patent Pending)

The superior new Honey Locust with a straight stem and well-proportioned, shapely head.

Write us for complete information and listing all items.

NURSERYMEN FOR 75 YEARS

THE **COLE** NURSERY CO.
PAINTSVILLE, OHIO

other areas, with Douglas fir running second and Norway spruce third.

Scotch Pine Rapid Grower

Scotch pine is the most rapid-growing of the Christmas trees and also matures more uniformly. Nearly all of a Scotch pine planting is harvested in a 4-year period from six to nine years after planting. The other pines grow somewhat slower and less uniformly. Most of these other pines are sold when 8 to 9 years old, but volume sales stretch from six to 12 years after planting. Norway spruce sales stretch out over a 9-year period from 6 to 15 years, while Douglas firs are usually sold when they are from 8 to 15 years old.

Over one fourth of the trees sold from Pennsylvania plantations were shipped to markets in other states. Nearly one half of the trees from the northwest district and 34 per cent from the west central district went out of state. The proportion shipped out of state from the other areas was smaller and depended largely on the distance to markets and the supply in relation to local demand.

ROSE INTRODUCTIONS

Two new roses recently introduced by the Jackson & Perkins Co., Newark, N. Y., are Pink Chiffon and Red Wings, both shown for the first time in the firm's fall catalog.

Red Wings has long-lasting flowers of a snappy red that are said to survive hot sun, to be unfading and resistant to spotting by summer rains. The 15-petaled flowers have a spicy fragrance. The plant is medium large (to three feet), well formed and clothed in abundant insect and disease-resistant foliage. Red Wings is said to be an improved Donald Prior. Prolific in bloom, the many-flowered clusters that Red Wings continues to produce throughout the summer should make the variety useful in bed plantings and as a foundation subject.

As Pink Chiffon progresses from bud to flower its delicate pink is retained in the outer petals while the center develops a darker hue. Each bud is long, pointed and has a light touch of yellow at the base of the petals. The open hybrid tea shaped flower is full, slightly cupped and is said to be three inches across and moderately fragrant. The plant grows 24 to 30 inches tall and has abundant foliage. Its main characteristic is the mass of flowering shoots from the ground. Flowers are said to appear constantly on single stems or in clusters of six or more blooms.

NORTHERN-GROWN SEEDLINGS and TRANSPLANTS

Transplants are hand transplanted, well-branched for potting or cans.

Per 100 Per 1000

Black Hills Spruce, 3-yr. 2

4 to 6 ins.	\$10.00	\$ 80.00
6 to 8 ins.	15.00	120.00
8 to 10 ins.	18.00	150.00
10 to 12 ins.	25.00	225.00

Colorado Blue Spruce, 3-yr. 2

4 to 6 ins.	12.00	100.00
6 to 8 ins.	15.00	120.00
8 to 10 ins.	18.00	150.00
10 to 12 ins.	25.00	225.00

American Arborvitae, 3-yr. 2

10 to 12 ins.	12.00	100.00
12 to 15 ins.	18.00	150.00

SEEDLINGS, 3-yr.

Colorado Blue Spruce

4 to 6 ins.	4.50	40.00
------------------	------	-------

Black Hills Spruce

4 to 6 ins.	4.50	35.00
------------------	------	-------

White Spruce

4 to 6 ins.	4.00	35.00
------------------	------	-------

Ponderosa Pine

6 to 8 ins.	3.00	25.00
8 to 10 ins.	3.50	30.00

Austrian Pine

6 to 8 ins.	4.00	30.00
8 to 10 ins.	5.00	40.00

Scotch Pine, Riga or French

6 to 8 ins.	3.50	25.00
8 to 12 ins.	4.00	35.00

Mugho Pine, Tyrolean, sheared

4 ins.	5.00	45.00
-------------	------	-------

Norway Spruce

4 to 6 ins.	3.50	30.00
6 to 10 ins.	4.50	40.00

Quality—Grading—Packing—The Best.

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Blackduck, Minn.

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THAT MAKE YOU REAL MONEY!

All along the distribution line, everybody profits big from dealing with Floc-Flo. We originated ornamental-tree flocking—so we've had more experience with flocking machines and supplies than any manufacturer in the country. We know how to produce better for less—and pass on the savings directly to you!



White.....	5 lbs.....	@ 80c lb.....	\$ 4.00
	25 lbs.....	@ 70c lb.....	17.50
	50 lbs.....	@ 60c lb.....	30.00
Ice Blue.....	5 lbs.....	@ 84c lb.....	4.20
	25 lbs.....	@ 74c lb.....	18.50
	50 lbs.....	@ 64c lb.....	32.00
Chilly Pink.....	5 lbs.....	@ 84c lb.....	4.20
	25 lbs.....	@ 74c lb.....	18.50
	50 lbs.....	@ 64c lb.....	32.00
Soft Yellow.....	5 lbs.....	@ 84c lb.....	4.20
	25 lbs.....	@ 74c lb.....	18.50
	50 lbs.....	@ 64c lb.....	32.00
Light Green.....	5 lbs.....	@ 84c lb.....	4.20
	25 lbs.....	@ 74c lb.....	18.50
	50 lbs.....	@ 64c lb.....	32.00

WHITE RAYON FLOCK: (Fire Retardant)			
5 lb. Bag or Box.....			5.00 each
10 lb. Bag or Box.....			\$10.00 each
25 lb. Bag.....			.90 per lb.
50 lbs. or over.....			.80 per lb.

COLOR RAYON FLOCK: (Fire Retardant)			
5 lb. Bag or Box.....			\$ 6.00 each
10 lb. Bag or Box.....			12.00 each
25 lb. Bag.....			1.00 per lb.
50 lbs. or over.....			.90 per lb.

WHITE CELLO FLOCK: (Fire Retardant)			
25 lb.....			\$.40 per lb..... \$10.00 each
50 to 2000 lbs.....			.30 per lb.
2000 lbs. and over.....			.20 per lb.

PERMANENT FLOCKING ADHESIVE:			
5 gallon lots.....			\$3.65 per gallon
50 gallon lots.....			2.65 per gallon
M L 2K ABSOLUTE FIRE PROOF FLOCKING - ADHESIVE			
CONCENTRATED - CONTAINS BLEACH TO AVOID DIS-			
COLORING:			
50 gallons.....	@ \$1.00 per gallon.....		\$50.00
30 gallons.....	@ 1.50 per gallon.....		45.00
5 gallons.....	@ 1.75 per gallon.....		8.75

NO. 6-2X ADHESIVE SUPPLY TANK:			
No. 6-2X Adhesive supply tank 2 gallon Capacity.....			\$39.50
No. A-15-15 ft. Air Hose.....			5.25
No. L-15-15 ft. Adhesive Hose.....			5.25

READY MIX GOLD PAINT:			
1 gallon.....			\$7.40 per gallon
5 gallons.....			6.80 per gallon
1 qt.....			2.10 each

SNO-STICK: (Fire Retardant)			
5 gallons.....			\$2.50 per gallon
30 gallons.....			2.00 per gallon
50 gallons.....			1.50 per gallon

FLAME STOP FOR FIRE-PROOFING TREES			
50 gallons.....	(50 gallon lots)		\$1.50 per gallon

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TERMS—25% deposit with order
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FLOC-FLO PRODUCER Flocking Machines



Flocks 8-ft. Tree in 5 Minutes
No outside air supply needed—plug in and flock—adhesive requires air. Top machine on the market.

RENT

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Three month flocking machine rental for \$150.00. This covers the entire Christmas Flocking Season, at the end of this season you may purchase the machine and your complete investment will be applied to the purchase price. You are not obligated to purchase if you do not wish to do so.



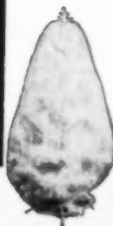
Vacuum powered, connects to vacuum cleaner.
Special Offer! BOTH GUNS \$7.50

\$3.95 each



ELECTRIC TREE FLOCKING TURN TABLE:

No. T-12 Electric Tree Flocking Turntable.....
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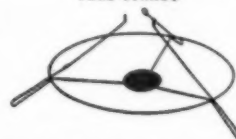
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52" width x 7 ft. long...
@ 50c each in 50 bag lots,
55c each—less than standard

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@ 35c each in 50 bag lots,
40c each—less than standard

72" width x 8 ft. long...
@ 60c each in 50 bag lots,
65c each—less than standard

36" "Wire Wonder" TREE STANDS



The most revolutionary on the market... takes just 2 minutes to mount a tree

36 stands..... \$7.20
37 to 108..... 6.00 Doz.
109 to 500..... 4.00 Doz.
501 or more..... 4.00 Doz.
(F.O.B. Chicago)

12 in. "Wire Wonder" Tree
Stands in lots of 72 or more
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ORNAMENTALS

for

FALL

Ligustrum amurense	Per 100	Per 1000
12 to 18 ins., 3 canes and up	\$12.00	\$100.00
18 to 24 ins., 4 canes and up	15.00	120.00
2 to 3 ft., 5 canes and up	20.00	150.00
3 to 4 ft., 6 canes and up	25.00	200.00

SHRUBS

Almond, Pink-Flowering
Cornus, in variety
Cotoneaster
Euonymus alatus

Forsythia
Lonicera, in variety
Lilac rothomagensis
Viburnum, in variety

TREES

Elm, Moline
Thornless Honey Locust
Maple, in variety

Mt. Ash, European
Sycamore, American
Poplar, Bolleana

EVERGREENS

Juniper, Pfitzer
Juniper, Blue Pfitzer
Juniper, Andorra
Taxus cuspidata
Taxus browni

Taxus hatfieldi
Arborvitae, Dark Green
American
Arborvitae, Pyramidal

Write for complete list

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Kankakee, Ill.

A complete line of

Quality Nursery Stock with a Growing Future

Fall, 1958 — Spring, 1959 Specimen LANDSCAPE STOCK

Phone, write or visit our nurseries, when in need of specimen stock for landscape use.

Spreading and Upright Yew, Spreading and Upright Juniper, Hemlock, Spruce, Fir, Arborvitae, Hollies, Euonymus vegetus, Euonymus coloratus, Euonymus radicans erectus, Euonymus alatus compactus, Magnolia, Pink and White Flowering Dogwood, Red Plum, Birch, Mountain Ash, Flowering Crab Apple, all leading varieties of Flowering Shrubs, etc.

Several thousand shade trees in variety and sizes, nursery-grown.

We offer a wide selection of fine-quality, northern-grown stock, all growing right here in our nurseries. Stock is available in nice, heavy, landscape grades.

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Plymouth, Ind.

Located at the north edge of Plymouth, on U. S. 31.

STAN SAYS

Transplanting Evergreens

During or immediately after a long drought, go slow in transplant evergreens. One might also make more money going fishing than to try to fill orders in November and December. If the customer will not wait until spring, better just forget the order.

I guarantee trees, shrubs, evergreens and Dutch bulbs for one year only; I will not guarantee lawns and perennials.

Syringa villosa, late lilac, has always been a favorite of mine until recently when I found that it is quite short-lived. I will still plant it, but not for anyone who is pinching the pennies. All nurserymen know that this lilac blooms in late May at a time when blooms are needed. This lilac planted in Pittsburgh in 1938 has been worthless for two or three years, so its life is 15 or 16 years.

Oxydendrum Arboreum

Ever since I moved to Pittsburgh 37 years ago I have been fond of the sourwood, Oxydendrum arboreum. Since it is not always available from nurseries in 4 to 6-foot sizes, I do not plant it often. Last summer, on my way to the American Association of Nurserymen's convention at Miami Beach, Fla., the first oxydendrum I saw was in a wooded section about 30 miles south of Roanoke, Va., along Route 220. The tree was over 30 feet high. I saw more oxydendrums as I traveled farther south through North Carolina, en route to Camden, S. C., and Florida. No doubt one would see even more if he went further west in North and South Carolina.

What appeals to me about the oxydendrum is that it has handsome foliage and blooms like those of Pteris japonica. It grows stiffly upright, a feature that is highly desirable in many cases. I believe the tree does best in acid soil, though I have seen it in the limestone soil of western Ohio. The foliage colors nicely in the autumn, and the leaves do not appear too early in the spring, which permits one to transplant the tree safely over a longer period, preferably B&B. Blooming when only a few feet high, the sourwood is a native tree of real merit, and I have found it free from insect pests and not subject to disease.

Special Features of the BLIZZARD

No Other Flocking Machine Can Offer

THE MOTOR: Only one $\frac{3}{4}$ -horsepower motor is used. The motor draws only 3 amps and is designed to withstand extreme abuse and constant use. This BLIZZARD motor is guaranteed not to overheat or burn out even when operated under maximum load and constant duty conditions because of its improved cooling features. Precision bearings are permanently lubricated; require no grease or oil for the full life of the motor.

THE FLOCK HOSE: A 14-ft. static-free plastic hose, $1\frac{1}{4}$ -in. diameter, is used. This hose is featherweight and more flexible than any other hose on the market. Guaranteed never to kink or clog. Both ends coupled with a molded rubber fitting.

WIRING: All wiring is concealed in the flock hose, lightweight plastic-covered wire is used. The control button is on the operator's end of the hose for fingertip control. (As an added safety factor, only 24 volts are used to control the entire unit).

RELAY: A Minneapolis-Honeywell relay is used. This relay has been proved in over 20 years of constant use without a failure.

HOPPER: You do not pay for engineering of a special fancy hopper. We use a standard 19-gauge steel drum with a capacity of 30 gallons. You store the flock in these steel drums and change to any color by simply changing the drum lid.

NO MAINTENANCE: With the exception of the motor (that needs no servicing), there are no moving parts to adjust, oil, grease or repair. There are no chains, belts, brushes or screens to adjust or replace.



FLOCK CONTROL: Any desired volume of flow can be had by simply setting an air regulator. No screens to change or valves to adjust.

NO EXPERIENCE REQUIRED: If you have never flocked before, you can start with a BLIZZARD and be a professional in one easy lesson.

AIR COMPRESSOR: We recommend a 2-horsepower or larger compressor be used. This will operate both the BLIZZARD agitator and the adhesive gun.

WEIGHT: The total shipping weight of the BLIZZARD flocking machine is only 50 lbs.

Price: \$345.00 F.O.B. Wilmette, Ill.

FRANK HLAVACEK & SONS

235 Ridge Rd., Wilmette, Ill.

Phone: ALpine 1-4400

Advances in Perennial Pot Culture

By George Rose

In 1956, Dr. John Mahlstedt of Iowa State College, Ames, Ia., headed a research project for the National Mail Order Nurserymen's Association on the ability of plants to hold up under shipping conditions. Perennials of several varieties were purchased from 20 mail-order nurseries, without the firms having knowledge of the test. Differences in shipping methods, the type of plant sent and the ability of the material to thrive when planted under ordinary conditions were all carefully studied and compared.

One result of the test was the discovery that potted plants almost invariably shipped better and survived better than did dormant bare-root plants, no matter how such plants were stored, packed or shipped. This was a bit discouraging to the mail-order industry since potted plants cost more to grow, more to pack and more to ship than dormant bare-root material.

Though it has long been the custom to pot perennials in clay pots, this practice has several disadvantages. The pots are heavy, which adds to the labor cost in moving them around; they break easily and must be handled with care; they are porous and thus a haven for nematodes, bacteria and plant diseases; they are difficult to sterilize; they take up a good deal of bench, frame or bed space, and, last, plants cannot be shipped in them because of their weight and fragility. Since plants cannot be shipped in the pots they were grown in, they must be knocked out, wrapped in paper, or reset in shipping pots before boxing for shipping. This entails a waste of time and money and is likely to loosen the pot balls so that the customer may receive a bare-root plant and a handful of loose loam.

Shipping Potted Plants

In my own firm, shipping potted perennials in volume began when we decided that small potted chrysanthemums from softwood cuttings gave far better results to the customers than overwintered, field-grown plants. At that time, there was much difficulty in overwintering field-grown plants, since we had little refrigeration.

To overcome difficulties in shipping potted plants, we did some investigation. We learned that during World War II the army had de-

veloped the use of ground sphagnum moss as a lightweight potting medium so that large quantities of experimental plants could be flown economically in airplanes. We began potting rooted chrysanthemum cuttings in a sphagnum moss potting medium, fertilized as needed with liquid fertilizer. We found that the plants grew there as well as, or better than, in ordinary potting compost, and the pot ball weighed about a fifth as much.

Difficulties arose, however. Plants when wrapped and packed often

reached the customer with their bases and sections in the moss rotted. Richard Fillmore, who was at that time at the Arnold Arboretum, Jamaica Plain, Mass., was growing test plants in moss for shipment to other research centers and told us that when the completely organic sphagnum moss in the pot ball is entirely enclosed in a shipping container, heat is generated and anaerobic bacteria multiply, rotting out the soft plant stem in short order. Mr. Fillmore suggested the addition of finely ground Styrofoam to the potting medium in a ratio of one part Styrofoam to three parts moss. The inert plastic particles separate the moss particles and prevent the generation of heat. This worked for us, and we have used the mixture ever since.

The next problem confronting us

THE KALLAY BROS. CO.

1251 Madison Ave.
Painesville, Ohio



Wholesale

Nurserymen

GROWERS OF AMERICA'S FINEST
EVERGREENS, SHRUBS AND TREES

In the Heart of Lake County

52 YEARS IN THE SAME LOCATION

TWO GENERATIONS OF SERVICE TO THE WHOLESALE
NURSERY AND LANDSCAPE INDUSTRY

Evergreen Specialists

Now Offering Our Customers a Variety
Of Young Taxus in Quantity

Inquiries and Personal Inspection Welcome

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America's Finest
**ROSES • BULBS • PLANTS
and SHRUBS**

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Wayside Gardens

THE JOSEPH F. MARTIN CO.

Growers of Fine Perennials and
Rare General Stock

Fall catalog available soon.

P. O. Box 189 Painesville, O.

was to find a pot which could be used for growing and shipping chrysanthemums, as well as for general use and reuse. We wanted a cheap, expendable, lightweight pot that could be easily sterilized and would take up less space in the bench than a clay pot, as well as provide the proper aeration and drainage for the plant.

At that time, we were knocking plants out of clay pots, dropping the balls into Neponset shipping pots and wrapping the plants in waxed paper for shipping, which seemed to be a slow, expensive method. Most of the new pots we tested—we have tested about 25 types—did not give so good plant growth as did clay pots. Many of the compressed pulp, peat or cow manure pots absorbed water and disintegrated before we were ready to ship. Plastic and aluminum, 2-inch rose pots, while satisfying most requirements, did not give sufficient growth. Suspecting that aeration might be at the root of the problem, we cut a series of slits in a number of aluminum and plastic pots. We believe that some metal toxicity made the plants grow poorly in the aluminum pots; however, the ventilated plastic pots proved as good as, or better than, the clay pots. We now grow practically every plant we pot in this ventilated pot, including house plants and our softwood cutting deciduous liners.

Another difficulty in shipping chrysanthemums was that the bottom leaves of the potted plants tended to turn brown and drop off in shipment. Through research done for a sponsoring group of Iowa nurserymen by Dr. Mahlstedt, we learned that we should not use waxed paper to wrap the plants, but that a more satisfactory material was polyethylene film. We also learned that it is best not to wrap polyethylene film around the plant itself when shipping in warm weather; so we enclose just the pot and the pot ball in a polyethylene boot closed at the top with a rubber band.

Labeling Technique

We attacked the label problem next. Nurserymen have found that sticking labels in the soil often means only that they will be knocked out; nor can labels often be attached to small, freshly potted stock. If one waits until shipping time, there is a chance that the plants will be mixed up. We decided to label the pots with plant names printed continuously at intervals on a strip of paper-backed adhesive tape. Since the pots are plastic and do not ooze moisture be-

YOU ALWAYS GET MORE AT VANS PINES

Choice Christmas Trees!

SIX MORE BENEFITS FOR YOU

You'll increase your profits when you buy your Christmas trees from Vans Pines. Better trees sell for more when you select **AUSTRIAN PINE . . . SCOTCH PINE . . . WHITE SPRUCE . . . NORWAY SPRUCE . . . or WHITE PINE.** Here's why:

1. **They look better** because they're symmetrical—grown from Vans seeds, pruned and sprayed at various growth stages. They're good looking, healthy trees.
2. **Individually selected** for the size and height you want. Selected by trained field men.
3. **Individually tagged** before being cut, so you are guaranteed the trees selected.
4. **Easily shipped** because Vans Pines is only a half mile from access on new U. S. 31 expressway, 8 miles north of Holland. C&O railroad siding is just as close.
5. **On time deliveries** mean you get your trees exactly as you need them. Vans Pines adheres to daily shipping schedules that you can depend on.
6. **Right prices** for quality trees mean that you sell more trees, at a full profit and these right prices are the same to all!

WRITE, WIRE, or Phone Holland (Export 6-0702) for latest Price List on Christmas trees.

CHRISTMAS TREES • SEEDLINGS • TRANSPLANTS



Vans Pines

WEST OLIVE 14, MICHIGAN

Introducing — EUONYMUS PAULI

Bush type, holds good green color all winter, shears well. From the Patens type. Nearly nonfruiting. Can be used in any location.

	Each	Each	Each	Each
	Per 25	Per 100	Per 1000	
9 to 12 ins., B&B	\$1.00	\$0.95	\$0.85	\$0.75
12 to 15 ins., B&B	1.25	1.20	1.15	1.00
15 to 18 ins., B&B	1.50	1.40	1.25	..

All heavy plants. No shipping.

Potted, 1-yr. plants, \$18.00 per 100. These can be shipped.

PAUL'S NURSERY

R. D. 3

Shelby, Ohio

IVY

Baltic and English

	Per 100	Per 1000
Rooted cuttings	\$ 5.00	\$ 45.00
1-yr., 2 1/4-in. pots	15.00	135.00

GILSON GARDENS
Perry, Ohio

HARDY ENGLISH IVY

(Hedera helix)

Rooted cuttings for landscape planting.
\$7.50 per 100; \$65.00 per 1000

BEARDSLEE NURSERY
Perry, Ohio

FOR THE FINEST in quality nursery stock

send for our latest trade list.

A few items in surplus:

EUONYMUS patens
EUONYMUS Sarcocoe
JUNIPERUS hetzi glauca
LONICERA compacta (Clavey's)
ULMUS pumila
ULMUS campestris (procera)
PHILADELPHUS virginialis

LIGUSTRUM Vicary
THUJA orientalis elegantissima
BERBERIS atropurpurea
SPIRAEA vanhouttei
SPIRAEA froebelii
ULMUS carpinifolia var.
Christine Buisman

SUNNYSIDE NURSERIES

Phone: NOrmandy 7-2341

Troy, Ill.



How They Have Grown!

← From

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Your request will bring news of how you may offer your customers this modern tree with year-round indestructibility.



AUGUSTINE ASCENDING ELM
932 E. 50th St. Chicago 15, Ill.

DWARF APPLES

(All sizes 2 and 3-yr.-old)

In the following varieties: budded on understock as indicated.

- * Close (Improved Astrakhan Red) on No. 9; No. 7.
- * Cortland on No. 9; No. 7; No. 2.
- * Delicious (Red) on No. 9; No. 7; No. 2.
- * Lodi (Improved yellow transparent) on No. 9; No. 7.
- * McIntosh on No. 9; No. 7; No. 2.
- * Red Melba on No. 9; No. 7; No. 2.
- * Spy on No. 9; No. 7; No. 2.
- * Wealthy on No. 7; No. 2.
- * Yellow Delicious on No. 9; No. 7; No. 2.

- * 30,000 CUT-LEAVED WEEPING BIRCH (Betula laciniata), all sizes, 2 to 8 ft.

Write for price list today.

You can't beat our prices or the quality of our stock.

BROOKDALE-KINGSWAY NURSERIES

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Bowmanville, Ont., Canada

Peach

Hydrangea P. G.

Hydrangea P. G. (Tree Form)

Ornamental Trees

Grapevines, 1-yr. and 2-yr.

Thorne Brewster

WILLOWBEND NURSERY
PERRY, O.

TREES FOR AMERICAN GARDENS

by Donald Wyman. 745 recommended trees, 1600 species and varieties. \$8.00.

American Nurseryman Chicago 4.

THE HOME NURSERY

Corliss Ingels

LaFayette, Ill.

Since 1887 in Stark County

At the junction of Rt. 17 and 78
Catering to midwestern landscape nurserymen.

Shade Trees—Shrubs—Evergreens.

Write for complete Wholesale List

GOLDEN VICARY PRIVET

Lovely, solid, golden-leaved variety. Extremely adaptable for a striking border. Retains full golden color from spring to fall. Beautiful for rose bed borders. Should have full sun.

Potted liners	Per 100	Per 1000
Rooted cuttings	\$18.00	\$150.00
	10.00	80.00

BEARDSLEE NURSERY Perry, O.

hind the tape, the label sticks well. By keeping a count of the labels used, we also can keep a count on the number of plants potted. Confusion and mixups are almost eliminated.

We bought a Solubridge electronic soil-testing apparatus and found that by using it we could fertilize when the plants needed food and not wait until they showed signs of deficiency, as we had previously done. We also found that if we fertilized regularly without testing the soil, dangerous build-ups of nitrogen occurred, especially during cold, cloudy weather. And three waterings were usually enough to leach out most of the available nutrients from 2-inch rose pots where compost or sphagnum was the medium utilized.

We began a search for a delayed-action, slowly available fertilizer to cut down on the need for frequent fertilizing. We tested Uramite and Borden's 38 and found that they maintained a level of 25 to 30 parts per million of available nitrogen. It is dangerous to use these slowly available fertilizers without a good soil-testing unit, frequently used. In cold, cloudy weather, the nitrogen content in the pots shoots up suddenly. An imbalance of fertilizers, particularly a deficiency of potash, with an excess of nitrogen, is also dangerous.

After our successes with chrysanthemums, we began growing hardy asters, Artemisia Silver King, Helianthus Loddon Gold and heuchera varieties, using the same methods. We hope to grow all perennials this way in the future.

A plant that is seriously potbound in sphagnum will react to planting in the field in the same way as will a potbound plant from a loam medium. Unless the roots are parted and are scattered out a bit, the plant will have trouble starting and will always have a ball of roots at its center.

Costs

According to our cost-accounting figures, growing, processing and shipping costs for field-grown perennials shipped dormant and bare-root break down as follows: Growing in the field is 44.8 per cent of the total growing and shipping cost, which includes propagation stock; payroll; depreciation of trucks and equipment; maintenance and repairs; employee insurance; payroll and property tax; rent of land; water, light and power; fuel; truck and tractor operating expense and truck licenses. About 36.59 per cent of the total production and shipping cost, not including postage, is the cost of prep-



Scarff's Nursery, Inc.

New Carlisle, Ohio

Special List — Top-Quality Stock

— Finest Miami Valley Grown —

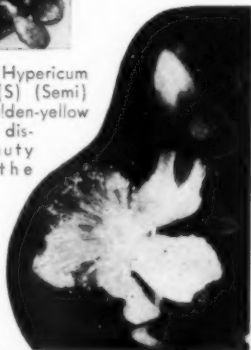


BITTERSWEET TREE

(Euonymus yedoensis)

Colorful fall foliage. Heavy clusters of bittersweet-type berries.

Pot O'Gold (Hypericum kalmianum) (S) (Semi)
Ball of golden-yellow flowers of distinctive beauty throughout the summer months.



TAXUS

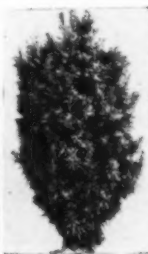
Cuspidata
Capitata
Hicksi

ARBORVITAE

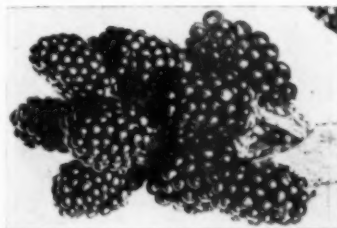
Dark Green American
Woodward Globe

PFITZER JUNIPER

Green, Hetz Blue and Compacta



NEW "MIDNITE" BLACKBERRY



We are introducing this variety because of its fine fruiting performance and its strong, thrifty cane characteristics in comparison to other blackberry varieties.

NEW BLACK HAWK RASPBERRY

Thrifty canes and a heavy yielder of large strikingly black raspberries. Both tips and transplants.

Send for Complete Trade List and Prices of Fruits. Ornamental Shrubs, Vines, Evergreens, Special Mail-order Items and Lining-Out Stock. We invite you to drive over to our nursery to see this stock.

aration of plants for shipping and the storing of material until needed. These costs include payroll, processing supplies, maintenance and repair of equipment, employee insurance, payroll and property tax, rent, water, light and fuel. Shipping costs, not including postage, are 18.56 per cent of the total production and shipping costs and include payroll, shipping supplies, maintenance and repair, employee insurance, payroll and property taxes, light and fuel.

In all probability, hardy perennials cannot be grown so cheaply as potted plants as they can be in the open field. We do not have a cost breakdown on the potted perennial phase of our business. The difference in cost between the two items may not be so great if one considers that the processing of a dormant perennial costs almost as much as the growing of it, while there is little processing cost for a potted perennial. Shipping costs for the latter, however, are considerably higher.

On the other hand, the more favorable appearance of the plant when received by the customer and the increased livability have a considerable value. I believe that potted perennials could be priced higher than dormant stock and customers would willingly pay the difference.

TAXUS — EUONYMUS — ILEX AZALEA MOLLIS

100,000 Azalea mollis

50,000 Taxus, spreaders and upright, up to 30 ins.

10,000 Potted evergreens, shrubs and trees, 30 varieties

Euonymus alatus, E. alatus compactus, up to 4 ft.

Euonymus vegetus, spreaders and upright

Ilex rotundifolia, I. convexa, I. hetzi, up to 30 ins.



DUGAN NURSERIES, INC.

Center St.

Perry, Ohio

Visit us just eight miles east of Painesville, south off U. S. Rt. 20



Such an increase should cover the increased cost of production and shipping and increase the profit per plant.

McMANMON'S 75TH YEAR

Marking its 75th anniversary in the nursery business is McManmon's Nurseries Trust, Ltd., Lowell, Mass. Started by the late James J. McManmon, the firm is now headed by his son, John V. McManmon. The 65-acre nurseries, including a location

GARDEN MUMS

and

GROUND COVERS

CUNNINGHAM GARDENS, INC.
Waldron, Ind.

LINING-OUT STOCK

For Shipment
Fall, 1958—Spring, 1959

POTTED and TRANSPLANTED STOCK

	Each	Each
	Per 100	Per 1000
ARBORVITAE, Woodward Globe		
1-yr., 2 1/4-in. pots	\$.20	\$.17 1/2
BUXUS, KOREAN		
2-yr., 2 1/4-in. pots,		
3 to 6 ins.	.25	.22 1/2
3-yr., 2 1/4-in. pots, 4 to 6		
ins.	.27 1/2	.25
BUXUS SEMPERVIRENS		
1-yr., 2 1/4-in. pots, 4 to 6		
ins., br.	.30	.17 1/2
2-yr., 2 1/4-in. pots, 4 to 6		
ins., br.	.22 1/2	.20
2-yr., 2 1/4-in. pots, 6 to 8		
ins., br.	.25	.22 1/2
HEDERA HELIX, Hardy Baltic Ivy		
2-yr., 12 to 14-in. stems	.12	.11 1/2
JUNIPER HETZI		
2-yr., 2 1/4-in. pots,		
5 to 8-in. stems	.22 1/2	.20
3-yr., T. in beds, heavy		
plants	.37 1/2	.35
JUNIPER PITZERIANA		
2-yr., 2 1/4-in. pots, 6 to 8		
ins., br.	.22 1/2	.20
3-yr., 2 1/4-in. pots, 8 to		
10-in. stems	.27 1/2	.25
3-yr., T. heavy plants, in		
beds	.37 1/2	.35
MAHONIA AQUIFOLIUM,		
Oregon Holly Grape		
2-yr., 2-in. pots, 4 to 6		
ins.	.17 1/2	.15
2-yr., 2 1/4-in. pots,		
6 to 8 ins.	.22 1/2	.20
TAXUS CUSPIDATA, spreading yew		
1-yr., 2 1/4-in. pots, 6 to 8		
ins.	.20	.17 1/2
4-yr., T. light, 8 to 10		
ins., br.	.37 1/2	.35
4-yr., T. heavy,		
8 to 10 ins., br.	.45	.40
TAXUS HICKSI, Upright Yew		
1-yr., 2-in. pots, 6 to 9		
ins.	.20	.17 1/2
1-yr., 2 1/4-in. pots,		
6 to 9 ins.	.22 1/2	.20
3-yr., T. under lath,		
6 to 9 ins.	.45	.40
VIBURNUM BURKWOODII		
2 1/4-in. pots, S., 6 to 8 ins.	.20	.17 1/2
2 1/4-in. pots, cutting-		
grown, 6 to 8 ins.	.22 1/2	.20
VIBURNUM TOMENTOSUM		
PLICATUM		
2 1/4-in. pots, 6 to 8 ins.,		
br.	.25	.22 1/2
2 1/4-in. pots, 8 to 10		
ins., br.	.35	.30
WEIGELA VANICKEI		
1-yr., 2 1/4-in. pots, 6 to		
10-in. stems	.20	.17 1/2
2-yr., 3-in. pots, 10 to		
15-in. stems	.27 1/2	.25

Write for our complete list of lining-out stock and finished landscape material.

FLORAL GARDENS NURSERY

25 miles west of Dayton, O. Rt. No. 35

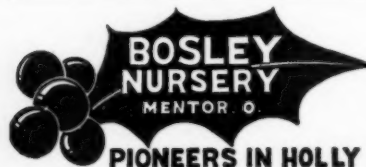
Eaton, Ohio

ORIENTAL POPPIES

Good selection of varieties left. First-quality plants. Write for quotations.

BENTLEY'S HARDY PLANTS

2559 Mentor Ave.
Mentor, Ohio



at Dracut, Mass., offer a complete stock of ornamental evergreens, shade trees, shrubs and roses. Cut flowers and potted plants, McManmon's specialties, are produced in 35,000 square feet of greenhouse space. Mr. McManmon is married to the former Edith Riley, and they have three children, John, who is studying landscape architecture and nursery management at Massachusetts State University, Amherst; James, and Edith.

CHICAGO BLOOMS

As a reflection of the rapidly growing trend toward landscaping of industrial areas, even large cities are beginning to take on a greener look. Downtown Chicago, from the Loop business section to the Chicago river north and west of it, has been transformed by many plantings that relieve the vistas of concrete, masonry and steel. Much of the new downtown planting was done in cooperation with the Chicago central area committee in a projected program to give the city's central merchandising blocks some of the appeal of the suburban shopping centers.

Seventy-three Chinese elms have been planted in circular concrete containers at intervals along both sides of busy State street. Around the bases of these trees are vines and plants that are changed with the season, bulbs in the spring, petunias during the first part of the summer and chrysanthemums in the fall.

The city has placed 38 hawthorn trees and 108 flower boxes around the City-County building. Gardenia bushes and a gay color scheme enliven the department of sanitation river frontage. Flower boxes adorn the river railing and dock sites of other water-front buildings. Near the Michigan boulevard bridge, the new riverside structure housing the Sun-Times newspaper offices and production facilities has a terrace containing trees and lavish beds of white petunias and red geraniums. The Garden Club of Illinois maintains a spacious garden adjacent to the river west of the Loop. Along the bank of the Chicago river near the Loop is the terrace garden of the Morton Salt Co., where experts from the Morton Arboretum, Lisle, Ill., are experimenting with plants adaptable for city growing.

Adorn Modern Sites

One of the newest skyscrapers in the business section, the Inland Steel building, almost in the center of the Loop, fronts its modern steel and glass exterior with a sidewalk-level

NEW AND COMING SURE-FIRE ROSES

BINGO

(Plant Pat. No. 1392)

A deep red hybrid tea with grandiflora tendencies. A. R. S. rating 7.9; is becoming more popular and the demand for spring, 1959, will be great. Order yours now! Suggested retail, \$2.50.

PINK FRAGRANCE

(Plant Pat. No. 1493), A.R.S. 1958, 7.6

A many-petaled pink rose with outstanding lustrous foliage. This vigorous bush is one of the best pink roses. Suggested retail, \$2.50.

Each	Each	Each	Each
1 to 9	10 to 19	20 to 99	100 to 249
\$1.60	\$1.40	\$1.25	\$1.20

Each 250 and up, \$1.10

ORDER THESE ROSES FROM ANY OF THE FOLLOWING NURSERIES:

The Monroe Nursery Co.
Monroe, Mich.

The Greening Nursery Co.
Monroe, Mich.

Peterson & Dering
Scappoose, Ore.

Shenandoah Nursery
Shenandoah, Ia.

Gerard Klyn Co.
Mentor, O.

Elmer Roses
6708 N. San Gabriel
San Gabriel, Calif.

Quality liners for Fall, 1958, Spring, 1959

"Our constant wish is to serve you . . . to satisfy you is our deepest concern."

	Per 100	Per 1000
European Mt. Ash		
6 to 9 ins.	\$ 6.00	\$ 50.00
9 to 12 ins.	8.00	70.00
12 to 15 ins.	10.00	85.00
Viburnum lantana,		
understock size		
4 to 6 ins.	6.00	50.00
Syringa vulgaris		
1-yr., strong	6.00	50.00
Green-leaved Barberry		
2-yr., 9 to 12 ins.	6.00	50.00
2-yr., 12 to 18 ins.	7.50	65.00
1-yr., 9 to 12 ins.	5.00	40.00
Quercus—Pin Oak		
2-yr., 12 to 15 ins.	10.00	40.00
2-yr., 15 to 18 ins.	12.50	100.00
Red-leaved Barberry,		
good color		
1-yr., 6 to 9 ins.	6.00	45.00

Flowering Crab Apple Grafts Strong, 1-yr., in field beds.

Malus Hopa	25.00	...
Malus eleyi	25.00	...
Malus Red Silver	25.00	...

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flower bed, while at the rear is a grouping of Norway spruce and crab apples. Prominent hotels and downtown clubs have leafy standards at their entrances.

The facades of numerous buildings in the Loop and along Michigan avenue are now adorned with colorful plantings at curbs, flanking window displays and over doorways. Lamp-posts along Michigan boulevard have circular platforms for displays of bright artificial flowers and vines in natural effect.

Out-of-town visitors who have not seen Chicago for a number of years have been pleasantly surprised at the attractive, changed appearance of Chicago, brought about by the use of trees, shrubs and other plants suitable for an urban setting.

TOUR ONTARIO AREA

[Concluded from page 8]

ing hills on both sides of the ravine. After the picnic lunch the group proceeded to the Leaver Mushroom Farms and spent a short time observing the system of soil preparation, mulching, pasteurizing, spawning and cutting mushrooms.

Later in the afternoon a short stop was enjoyed at a wayside mart, a co-operative market under the supervision of the Ontario provincial government. From there the party proceeded to Niagara Falls, to spend the evening observing the parks and gardens in the vicinity of the falls. A short time was provided to observe the unique educational school of gardening, where a small group of students spend three years studying practical horticulture.

Early Sunday morning the Michigan nurserymen and the Michigan State University students visited a tobacco farm near Delhi, Ont. This farm of Bill Tregis is situated in the center of a rich tobacco-growing area, and harvesting was in progress. From there the group went to McConnell's Nursery, Port Burwell. This is one of Canada's largest mail-order nurseries, but it also handles retail and wholesale sales, using a slogan "Hardy Plants for Canadian Homes." The firm ships plants to all parts of Canada, from the Yukon to Newfoundland. Recently a new, modern retail assembly building was opened. During the rest of the afternoon the group jubilantly sang their way back to Kellogg Center at East Lansing, having had a most enjoyable trip, with wonderful meals and good company, and feeling all had learned a great deal about horticulture in southern Ontario.

There's a pre-sold market for the MORaine[®] LOCUST

guaranteed thornless and seedless

New sales and new profits are yours when you sell the Moraine Locust. For here is a shade tree you can recommend with confidence. Scientific propagation and 23 years of growth experience has proven the Moraine Locust to be absolutely free of thorns and seed pods. This patented tree (patent No. 836) is guaranteed thornless and seedless for life! Here's a real sales plus that means extra profits for you.

Luxuriant solid green foliage

Maintains its solid green foliage throughout the leaf season. Provides a healthy green live appearance so desirable during the dry period of the hot summer months.

Graceful shape

Grows to a wide spreading vase shaped tree of exceptional beauty.

Fast hardy growth

MORaine Locust has a hardwood cellular construction that makes it resistant to storms. Grows to a height of 25 to 30 feet in just 10 years. Transplants easily— withstands drought—grows luxuriantly in almost every climate.

MORaine LOCUST LICENSED GROWERS

BROOKDALE-KINGSWAY, LTD.
Bowmanville, Ont., Canada
COMMERCIAL NURSERIES
Decherd, Tenn.
DOTY & DOERNER, INC.
Portland 19, Ore.
THE GREENING NURSERY CO.
Monroe, Mich.
HILLENMEYER NURSERIES
Lexington, Ky.
HINSDALE NURSERIES
Hinsdale, Ill.

ILGENFRITZ NURSERIES, INC.
Monroe, Mich.
JACKSON & PERKINS CO.
Newark, N. Y.
KELLY BROS. NURSERY
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Arlington, Neb.
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National Advertising Program

The MORaine Locust is advertised in leading flower and garden publications to help pre-sell your customers. Fame of the MORaine Locust has spread rapidly due to the tree and to enthusiastic acceptance by the nation's leading nurseries.

Plan now to get your share of this fast growing and profitable business by stocking more MORaine Locust trees now. Contact one of the MORaine Locust Licensed Propagators.

MORaine[®] LOCUST
The aristocrat of shade trees

*This variety of Honey Locust tree is covered by U. S. Plant Patent No. 836 and is being handled under license from The Siebenthaler Company, owner of the registered trade-mark "Moraine" in the United States and Canada.

ATTENTION SALES LOT OPERATORS

For fall planting, ready to go anytime, well-sheared, 3 times transplanted, clean stock, following items:

	Each	Each 10 lots		Each	Each 10 lots
Hetz Juniper , 16 to 24 ins.	\$3.00	\$2.75	Ilex convexa (Chinese Holly), 14 to 16 ins.	3.00	2.75
Hicks Yew , 18 ins.	4.00	3.75	Ilex glabra (Inkberry), 14 to 16 ins.	3.50	3.25
Hicks Yew , 24 ins.	4.50	4.00	Norway Spruce , 2 to 3 ft.	3.00	2.75
Taxus cuspidata , spreading, 12 to 16 ins.	3.50	3.00	3 to 4 ft.	4.00	3.75
Canadian Hemlock , 3 ft.	4.00	3.50	4 to 5 ft.	5.00	4.75
Mahonia aquifolium (Oregon Holly), 12 to 15 ins.	3.00	2.75	Black Hills Spruce , 24 ins.	2.50	2.25
			30 ins.	4.00	3.75
			36 ins.	5.00	4.75

All stock is B&B priced. Loaded on your truck at our nursery located 7 miles east of Canton.

SUNLIGHT GARDENS

6770 Georgetown Rd., N. E.

East Canton 30, Ohio

Nursery Mechanization For Greater Profits

By Norman J. Scott

Many nurserymen are so used to thinking in terms of their own production that they sometimes overlook other viewpoints—and may find their anticipations in error. The term lining-out size, as it is applied to various kinds of ornamental nursery stock, has changed considerably in the past few years. At one time most nurserymen considered lining-out size to be the size of a plant started by the nurseryman and then transplanted within the nursery for growing on into a larger size. Lately, lining-out size has taken a new meaning and now often may be compared with transplanted sizes. Lining-out size may mean stock which will either be grown on into larger specimens or will be sold when taken from the field or beds. In either case it is grown for a profit.

The largest profit will be made when production is easiest and cheapest. Nursery mechanization, which has made many advances in the past few years, will enable the nurseryman to save much time, effort and money. Nurserymen often make the mistake of thinking that mechanization refers only to the use of machinery. That is not true. The organization of one's thinking and the strategic placement and handling of help are as much a part of mechanization as is the machinery itself. A nursery cannot be mechanized simply by ordering a few machines. One must first take into consideration soil type, climate conditions and, especially, the market. If the nursery is mechanized and turned into a plant-producing assembly line, the market must be open enough to absorb the much larger quantity of produce.

Laborsaving Devices

There are many laborsaving devices for the production of deciduous stock which the nurseryman may investigate once he has decided to mechanize. Cuttings can be made to proper length with high-speed, fine-toothed saws or machines consisting of two planer blades work-

ing like scissors, motor driven, with a foot control to leave both hands free. Five to 15 cuttings may be made at one time, depending on the thickness of the wood. Elastic bands have been found to be ideal for holding cuttings together in a bundle for storage. They go on faster and easier, and rubber does not rot as does string.

Large nurseries have found that planting machines are effective. Planters do a better, as well as faster, job of planting than the old hand method. A good planter opens a trench to the desired depth, and the men riding the planter gauge their planting speed by the speed of the

tractor. Any nurseryman who purchases a new tractor should have incorporated into it the lowest gear that he can obtain, because new methods may be devised to do the work, if the tractor speed is slow enough. It is an expensive operation to have a low gear installed after the tractor has been bought, but it is quite economical to do so when the tractor is being ordered from the factory.

When stock is rooted in the fields the first year and the nurseryman wishes to cut it back to obtain a more even stand and larger, bushier plants, the use of power hedge shears operated from the tractor by means of air compressors is proving satisfactory. We use an air compressor from the power takeoff with the hedge trimmers. Three or four men can progress down the field in unison, each taking a row, with their speed controlled by the forward speed of the tractor. Some nurserymen have even gone so far as to do away with

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Each

Blue Hets Juniper
Outdoor, full sun, 6 to 8 ins.,
bare-root 6c

Burk Juniper
Outdoor, shade house, 6 to 8
ins., bare-root 14c

Pfitzer Juniper
Outdoor, full sun, 6 to 8 ins.,
bare-root 7c

Spreading Japanese Yew
6 to 8 ins., bands 20c

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2½-in. pots, 8 to 10 ins.
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An address given by Norman J. Scott, Brookdale-Kingsway, Ltd., Bowmanville, Ont., Canada, at the Ohio State Nurserymen's short course held early this year at Columbus, O.

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	Per 10	Per 100		Per 10	Per 100
ARBORVITAE, American, sheared			PINE, Scotch		
24 to 30 ins.	\$25.00	\$225.00	3 to 4 ft.	\$37.50	\$350.00
30 to 36 ins.	30.00	275.00	4 to 5 ft.	45.00	425.00
36 to 42 ins.	35.00	325.00	5 to 6 ft.	55.00	500.00
ARBORVITAE, globosa			SPRUCE, Black Hills		
15 to 18 ins.	27.50	250.00	12 to 18 ins.	20.00	175.00
18 to 24 ins.	32.50	300.00	18 to 24 ins.	22.50	200.00
24 to 30 ins.	37.50	350.00	24 to 30 ins.	27.50	250.00
ARBORVITAE, Siberian			SPRUCE, Norway		
18 to 24 ins.	37.50	350.00	18 to 24 ins.	17.50	150.00
24 to 30 ins.	42.50	400.00	24 to 30 ins.	22.50	200.00
30 to 36 ins.	47.50	450.00	30 to 36 ins.	27.50	250.00
ARBORVITAE, shermani, pyramidal			36 to 42 ins.	32.50	300.00
24 to 30 ins.	30.00	275.00	JUNIPER, Pfitzer		
30 to 36 ins.	32.50	300.00	15 to 18 ins.	32.50	300.00
PINE, Austrian			18 to 24 ins.	37.50	350.00
24 to 30 ins.	32.50	300.00	JUNIPER, Savin		
30 to 36 ins.	40.00	375.00	15 to 18 ins.	32.50	300.00
3 to 4 ft.	45.00	425.00	18 to 24 ins.	37.50	350.00

We also grow a fine assortment of flowering shrubs, shade trees, peonies, phlox, fruit trees and lining-out stock. Write for copy of our latest wholesale trade list.

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Charles City Iowa



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JEWELL NURSERIES, Inc.

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the men completely and build a 3-sided cutter, which automatically cuts all plants to a given height and width in one operation. Some have incorporated a conveyer belt from the cutter to a power chipper, thus preparing a mulch and eliminating all handling.

Weeders

Once the plants start to grow, the weed problem begins, and this is where the weeding machine can take over. The Budding InRow weeder can be attached to any Farmall tractor. This year, we plan to use four of these mechanical weeders from the time the soil is fit to be worked until it freezes. The machine is not only a weeder, but also a mulcher and leaves a bed as fine as

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Available in rooted layers and transplanted stock. Perfectly graded.

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Christmas Tree List

Trees suitable for landscaping, good balls due to heavy soil condition. New burlap, treated or plain.

	1 to 25	25 to 50	100
Norway Spruce, B&B			
2 to 3 ft.	\$2.50	\$2.25	\$2.00
3 to 4 ft.	3.50	3.25	3.00
4 to 5 ft.	4.50	4.25	4.00
5 to 6 ft.	6.00	5.50	5.25
White Pine, B&B			
2 to 3 ft.	2.50	2.25	2.00
3 to 4 ft.	3.75	3.50	3.25
4 to 5 ft.	5.00	4.50	4.25
5 to 6 ft.	6.50	6.25	6.00
6 to 7 ft.	7.50	7.25	7.00
Red Pine, B&B			
2 to 3 ft.	2.50	2.25	2.00
3 to 4 ft.	3.50	3.25	3.00
4 to 5 ft.	5.50	5.00	4.75
5 to 6 ft.	6.50	6.25	6.00
6 to 7 ft.	7.50	7.25	7.00
Scotch Pine, B&B			
2 to 3 ft.	3.00	2.75	2.50
3 to 4 ft.	4.00	3.75	3.50
4 to 5 ft.	5.50	5.00	4.75
5 to 6 ft.	6.50	6.00	5.75
Austrian Pine, B&B			
2 to 3 ft.	3.00	2.75	2.50
3 to 4 ft.	4.00	3.75	3.50
4 to 5 ft.	5.50	5.25	5.00
5 to 6 ft.	6.50	6.25	6.00
6 to 7 ft.	8.00	7.50	8.00

The Norway Spruce, White and Austrian Pine are growing on heavy soil, thus assuring good solid balls of soil. The Red and Scotch Pine are growing on lighter soil.

However, balls will be nailed and strung tightly. For heavy selected spruce use 10 rate on quantity.

Cut Christmas Trees

	50 to 100	100 to 300
Scotch Pine		
4 to 5 ft.	\$2.00	\$1.75
5 to 6 ft.	2.50	2.35
6 to 7 ft.	2.75	2.50
7 to 8 ft.	5.00	4.50
Red Pine		
4 to 5 ft.	1.50	1.40
5 to 6 ft.	1.75	1.65
6 to 7 ft.	2.00	1.75

Balsam Fir
\$5.50 per bundle, 10 to 40 bundles
5.00 per bundle, 50 to 100 bundles
4.75 per bundle, carlot, approximately 450 bundles to box car, delivered from Nova Scotia.

Single Balsam, tied separately
6 to 8 ft., \$2.00 each at nursery or \$1.75 each when combined in carlot. Branches—With minimum of wood

Red Pine \$5.00 per 100 lbs.
Scotch Pine 6.00 per 100 lbs.
White Pine 7.00 per 100 lbs.

1000 lbs. or more, 1c less per lb.
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Taxus Cuspidata

3 yr. 2T 40.00



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any seedbed. It does not skin the plants. One machine displaced 15 boys and four men from the weeding gang last summer. The weeding machine must be used before the weeds are an inch high; it is not designed to handle larger weeds. Ordinarily the machine should weed from 10 to 15 acres a day in rows that are spaced 48 inches apart. The longer the rows are, the more efficient the operation is.

In the past it was thought that nursery stock could be grown with little spraying, but today it has been found necessary to spray almost everything. There are many kinds of sprayers and dusters. When purchasing a sprayer or duster, nurserymen should buy one which they consider, at the time, oversize. Many nurserymen have bought sprayers only to find that after they have been used for a time the pressure is not great enough. A pump of sufficient capacity is necessary.

This year we are going to combine the operation of our Jiffy balling machine sprayer, which we pass over the fruit trees, and the operation of our Budding InRow weeder, so that one man will do the two operations at the same time. A duster or sprayer can be put on the tractor for spraying lining-out sizes of stock. Mechanization is largely combination, whether it be of ideas or wheels.

Digging is no longer a problem in any nursery since mechanical diggers have taken over. This is especially true for lining-out sizes of plants grown in rows. The Kelley-type digger has proved satisfactory, especially if a shaking machine is attached for removing the soil. Not only will it save work, but the digger prevents the damage done to plants by careless laborers. The shaker or lifter can be combined with a small conveyor to carry the plants without further help to the truck, where they can be picked off the conveyor and placed on the truck bed as the vehicle progresses down the field, following the digger. The Vander Pol digger can be attached to a wide-front tractor and, operated hydraulically, it will dig at any set depth for seedling stock which is to be lifted. The tractor wheels can be widened out to take in the full width of the bed. The ram on these bed seedling diggers should be long enough to give good depth for evergreens.

Storage

An important laborsaving feature is a hoist or lift platform and steel bottom on the truck that transports the plants from the field to storage. The purpose of these is to permit un-

for Quality

- u** Berberis
- a** Mentorensis
- n** Euonymus
- t** Coloratus
- i** Ligustrum
- t** Ibolium
- y** Ovalifolium
- Salix**
- Discolor**
- Purpurea nana**
- Teucrium**
- Chamaedrys**
- Viburnum**
- Opulus nanum**

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Christmas Tree Seedlings
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Rt. 2, Grand Haven, Mich.

loading lining-out stock without the aid of any men except the driver of the truck. The driver can upend the hoist and drive away rapidly, leaving the plants on the floor almost as piled on the truck. A storage cellar with a high ceiling where the hoist can be put to its maximum height is especially advantageous for this procedure.

An alternative to the foregoing method is the use of portable storage racks, a maximum of four feet high (slightly less than the height of the storage quarters), wide enough to hold a double row of plants. The piling of the plants on the pallets is done in the field, and a fork lift places the racks on the truck and unloads them again at the storage cellar. The racks are placed one above another to the desired average storage height. The roots of the stock are placed outward, so they can be misted in storage and kept from drying until sorted or graded.

Winter storage of seedling stock is extremely important to maintain quality. Cellar ventilating and cooling fans equipped with differential thermostats will control temperature almost to a degree, provided the outdoor temperatures are low enough and provided the cellar is sufficiently insulated to retain the cold. These fans operate on two speeds, one of which keeps a constant air circulation within the storage at all times. The second opens the vents and brings in sufficient cold air to lower the inside temperature. An electric heater can be set in front of each fan to be turned on automatically to heat the cellar, through the circulating system, if the area becomes too cold.

Homosote, a paper fiber insulation board, is extremely absorbent and will also release moisture if necessary. It is ideal for storage, especially for fine fibrous-rooted seedlings, which require just the right amount of moisture present. When a storage is lined with Homosote, sweating on the walls will stop. It helps to prevent mildew by controlling the moisture in the atmosphere. We have found that ozonators also help to prevent mildew in the storage cellars.

Once lining-out stock is in storage, the problems of counting and grading plants begin. We count several million plants every year. We have devised a counting machine that is also part of our grading belt. The 35-foot belt, 30 inches wide, is controlled hydraulically, so that its speed can be varied, if necessary, without changing the pulleys. The machine is also equipped with a hoist, which

TREE LIST FOR FALL AND SPRING 1958 — 1959

	Per 100	Per 1000	Per 1000 in 10,000 lots
Upright Yew , from seed, several times sheared 6 to 10 ins., XX	\$65.00	....	....
Scotch Pine (2-1), 8 to 12 ins.	12.00	\$60.00	\$56.00
(2-1), 4 to 8 ins.	10.00	45.00	42.50
(2-0), 6 to 10 ins.	8.00	34.00	32.50
* (2-0), 4 to 8 ins.	7.50	24.00	22.00
* (2-0), 3 to 6 ins.	6.00	22.00	20.00
(2-0), 2 to 4 ins.	5.00	16.00	14.50
Scotch Pine, Auvergne, race Noble (2-1), 6 to 12 ins.	12.00	60.00	56.00
(2-0), 3 to 6 ins.	8.00	26.00	24.00
Austrian Pine (2-1), 4 to 8 ins.	10.00	45.00	42.50
* (2-0), 3 to 6 ins.	6.00	22.00	20.00
Colorado Blue Spruce (2-2), 6 to 10 ins. (this one item, fall only)	20.00	....	....
* (3-1), 6 to 12 ins.	14.00	75.00	72.50
* (3-0), 5 to 10 ins.	9.00	45.00	42.50
(3-0), 3 to 5 ins.	6.00	26.00	24.00
Norway Spruce (3-1), 6 to 14 ins.	12.00	70.00	67.50
* (3-0), 6 to 12 ins.	8.00	40.00	37.50
* (3-0), 3 to 6 ins.	6.00	25.00	23.00
White Spruce (3-1), 6 to 12 ins.	12.00	70.00	67.50
(3-0), 5 to 10 ins.	8.00	45.00	42.50
(3-0), 3 to 5 ins.	6.00	25.00	23.00
Black Hills Spruce (3-0), 4 to 8 ins.	8.00	40.00	37.50
(3-0), 2 to 4 ins.	6.00	25.00	23.00
Douglas Fir (2-0), 3 to 8 ins.	6.00	28.00	26.00
Ponderosa Pine (2-1), 3 to 6 ins.	8.00	40.00	....
Norway Pine (2-1), 3 to 6 ins.	8.00	40.00	....
Mugho Pine 4 to 8 ins., XX	35.00	....	....

*Write for price on 50,000 or more of one grade.

TERMS: Cash with order, please, or 1/3 deposit, balance before shipment. 5% for cash with order; on spring orders, 5% for payment before December 1. 50 at 100 rate, 500 at 1000 rate, all seedlings sold in multiples of 50, all transplants sold in multiples of 10. Minimum order \$10.00. Packing charges included in price of trees.

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We have the following nursery-grown shade trees for fall, 1958.

200 Rubrum Maple, 1 1/4 to 1 1/2-in. cal., B.R.	150 American Sycamore, 6 to 7 ft., B.R.
50 Rubrum Maple, 1 3/4 to 2-in. cal., B.R.	150 American Sycamore, 8 to 10 ft., B.R.
	250 Acer dasycarpum, 6 to 7 ft., B.R.
	300 Acer dasycarpum, 8 to 10 ft., B.R.

Write for price list.

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By John J. Pinney. 64 p. (1958). \$1.00.
American Nurseryman Chicago 4, Ill.

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\$18.00 per 100; \$150.00 per 1000.

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A few items in quantity.

Biota aurea nana
Juniper, canaerti
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Juniper, glauca
Juniper, keteleeri
Juniper, Pfitzer, extra good
Juniper, stricta
Taxus cuspidata
Euonymus alatus
Euonymus alatus compactus
Euonymus erectus
Euonymus patens
Euonymus vegetus
Ash, European Mountain
Cornus florida
Cornus rubra
Elm, Chinese
Crab Apple, Flowering
Locust, Honey
Magnolia
Maple, Crimson King
Maple, Norway
Maple, Columnar
Maple, rubrum
Maple, schwedleri

Maple, Silver
Maple, Sugar
Oak, Pin
Prunus Newport
Prunus Thundercloud
Redbud
Sweet Gum, TT, once root-pruned
Tulip Tree
Willow, Thurlow
Almond, Pink
Currant, Alpine
Barberry, Green
Barberry, Red
Barberry, mentorensis
Cotoneaster divaricata
Forsythia
Honeysuckle Bush
Philadelphus aureus
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Brand new beauty with golden florets often 2 ins. across — orange throat. This stock is propagated outdoors and may be lined out directly into the field. Get this new beautiful flowering shrub to please your customers.

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\$135.00 per 1000

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Bridgman, Michigan

permits it to be used as a conveyor or elevator. Thus the belt is four machines in one.

Grading Mechanically

Ordinarily, plants are graded by men who take an armful of plants and decide whether a plant belongs in the 6 to 9-inch size, the 9 to 12-inch size or the 12 to 15-inch size. This selection takes some time and is not always accurately done. However, if the graders can concentrate on picking only one size from a belt, accuracy and speed are both improved. The belt must be long enough to permit sorting of plants into five or six grades in one operation. The system works as follows: One man stands at the left of the belt and puts plants on it, regardless of their size. Each man in succession picks off the plants of his designated grade. When the grading is completed, the plants are counted. They are placed singly on the belt on a premarked white line and conveyed past the counting device, which is a combination of a photoelectric cell and a time-lapse counter, together with an accumulation gate. The photoelectric cell itself would not do the job, because of the variation in the branching and shape of the plants.

The machine will count from zero to 999 or any designated number. If one wants 25 plants in a bundle, he simply turns the counter to 25. The counter will permit 25 plants to pass, and the plants will move up against a gate, or accumulator, where they will be bunched together until a total of 25 is reached. Then the gate kicks up, and the bundle of plants moves on. As the bundles are accumulated, a workman takes each and passes it through a Saxminster tier. Each time an accumulation takes place, the counter automatically clears itself. Instead of one grading belt, there could be several belts in layers. As a man picked off his grade, he could put it on another belt, while other grades were placed on their designated belts, and with a counter mounted on each layer, the grading, counting and bundling could be completed in one operation.

Lining-out stock sells for a small price per unit; therefore the margin of profit on each item is small. To have a profitable business selling lining-out stock, one must depend on volume. Specialization, not only within one phase but within subdivisions of that phase, is recommended, as is concentration upon quality. Large industries specialize to greater and greater extents, and

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what is good for large industries is also good for the ever-growing nursery industry. Unit profit percentage is greater when the nurseryman becomes a mechanized specialist. As volume rises, so do profits. Mechanization will permit nurserymen to hire fewer men, but men of greater intelligence.

PEST CONTROL FACTOR

When plants are supplied with amounts of nitrogen, phosphorus or potassium that provide good growth, spider mites feeding on these plants are easier to kill with malathion, according to experiments conducted at the United States Department of Agriculture research center, Beltsville, Md. It was found that mites are also easier to kill when feeding on plants that have received a low level of phosphorus, but harder to kill when too much or too little nitrogen or potassium is applied.

These results of preliminary experiments with 2-spotted spider mites on pole lima beans were reported recently in the U. S. D. A. publication, Agricultural Research, where it was suggested that possible applications of the information might be made in regulating kinds and amounts of fertilizer for maximum effect on insects

and mites, as well as for maximum growth. Also advanced was the possibility of timing control practices to take advantage of seasonal variations in the level of nutrients in plant tissues.

These studies are being continued at the Beltsville center along with related investigations in which mite susceptibility will be measured in relation to plant growth variation caused by temperature and light treatment.

LIVE CHRISTMAS TREES

Nursery-grown, fully sheared.

Norway Spruce	Each	Scotch Pine	Each
3 to 4 ft., B&B	\$3.75	3 to 4 ft., B&B	\$4.00
4 to 5 ft., B&B	4.50		
5 to 6 ft., B&B	5.50		
White Pine		Red Pine	
3 to 4 ft., B&B	3.50	3 to 4 ft., B&B	3.50
4 to 5 ft., B&B	4.50	4 to 5 ft., B&B	4.50
5 to 6 ft., B&B	5.50	5 to 6 ft., B&B	5.50
6 to 7 ft., B&B	6.50	6 to 7 ft., B&B	7.00

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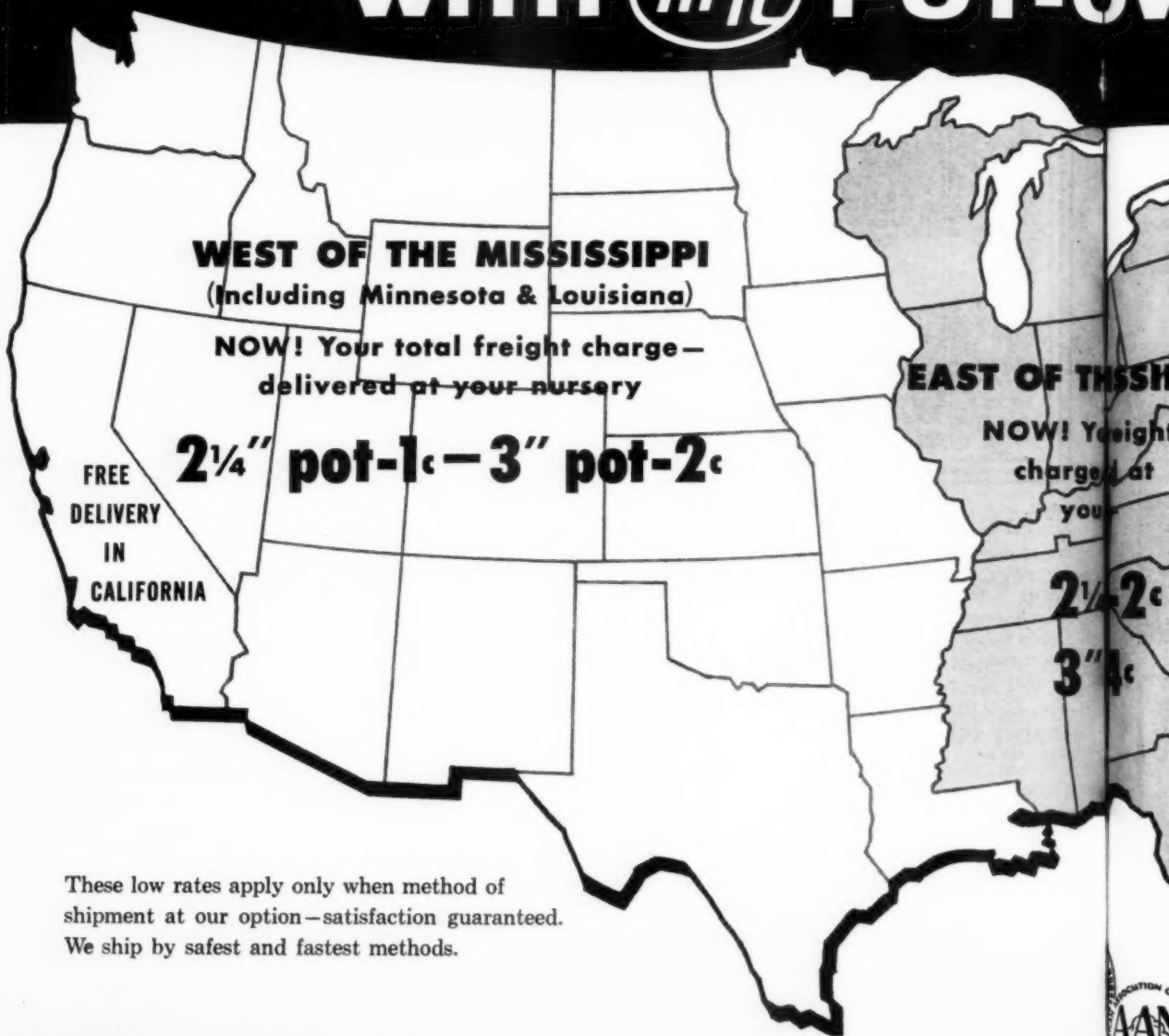
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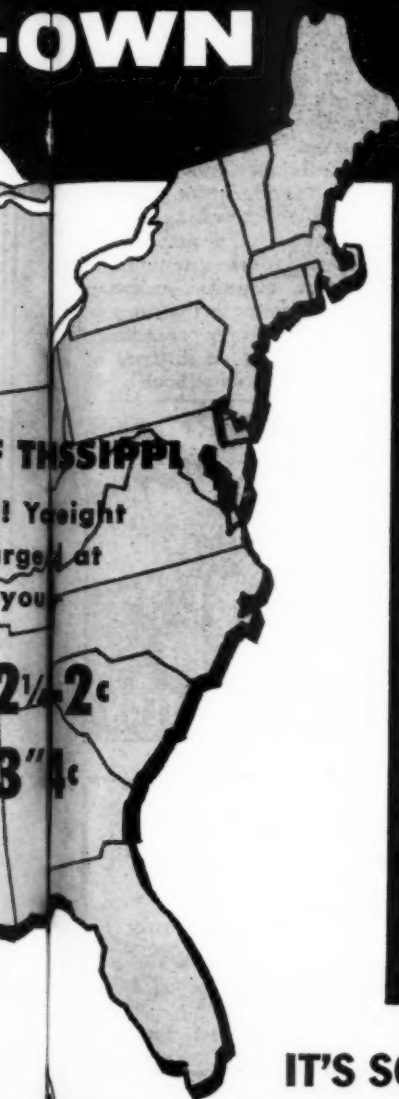
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Radioactivity Seen as Potential Nursery Aid

By Ruble Langston

The radioactivity that is associated with atomic decay processes holds many potential benefits for nurserymen and farmers. The word potential implies that there are many facts yet to be learned about the usefulness of radioactivity to the trade. Many of the facts already known are not yet being applied directly to the nursery industry, but much research with plants is being done.

Most nurserymen are familiar with the word radioactivity, though its application to better understanding of nursery crops may seem foreign to some.

Definition of Radioactivity

All substances, such as tables, chairs, floors and the human body, are composed of atoms of different elements, such as carbon, hydrogen, oxygen, phosphorus and potassium. All of these elements in their natural state are stable. They can be made into unstable atoms by upsetting their internal components and are then known as radioactive or unstable atoms. When atoms are radioactive, they are continually attempting to proceed to a stable state. They approach stability by emitting particles, which we call radioactivity. There is no chemically apparent difference between a radioactive and a nonradioactive atom, except the emission of particles by the unstable atom. The two atoms function inside a plant in exactly the same manner.

For example, there may be two rubber balls, identical in weight, size and color. If one ball remains at rest and the other is set into motion, the two balls are still identical, but one possesses kinetic energy. An analogy is somewhat true between radioactive and nonradioactive atoms. The bouncing ball is gradually coming to rest or a stable condition, and the same is true of a radioactive atom; it become stable not by loss of kinetic energy, but by emitting measurable particles. A key to using radioactivity is that radioactive elements throw out, or emit, particles

which, with proper tools, can be measured.

Geiger Counter Detection

The number of radioactive particles can be determined by use of a Geiger counter, a relatively complex instrument that measures accurately each particle coming from a radioactive atom and sums them up per unit of time. These units are called counts per minute.

A familiar radioactive source, such as a luminous watch dial, placed near a Geiger counter causes the indicator lights to begin counting, indicating the presence of radioactivity. Each light flick indicates one par-

ticle from a radium atom in this watch dial has entered the sensitive area of the Geiger tube and is being counted. Every time there is a loud click, it indicates that 64 particles have come from the watch dial. In scientific slang, an object that is radioactive is called "hot." If the watch were nonradioactive, it would be a "cold" watch.

The indicator lights continue to count in the absence of a nearby radioactive source. The activity registered then is called background radiation and is due primarily to cosmic rays, or radiation, coming out of the sky. In a building it can pass through several concrete floors, the roof and steel joists and enter the Geiger tube. Some radiation particles possess extreme penetrating power. In fact, cosmic rays probably continue and penetrate the ground some 10 or 20 feet. Neutrino radiation from decay processes in the sun can pass through the densely packed core matter of the sun to a distance of 10,000 sun's diameters without being



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Excerpts from a talk given by Ruble Langston, agricultural experiment station, Purdue University, Lafayette, Ind., at the winter meeting of the Indiana Association of Nurserymen held at the university.

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(In bags of 100)	Top size—13 cm. and up	Per 1000
Allbright—Bright red, 24 ins.	44.00	\$44.00
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Cordell Hull—Red with white stripes	46.00	46.00
Farncombe Sanders—Rose-scarlet, 28 ins.	44.00	44.00
Golden Age—Deep buttercup-yel., 26 ins.	42.00	42.00
Greuze—Violet-blue, 26 ins.	40.00	40.00
La Tulipe Noire—Purple-black, 26 ins.	44.00	44.00
Paul Richter—Geranium Lake, 24 ins.	44.00	44.00
Philip Snowden—Salmon-pink, 26 ins.	44.00	44.00
Pride of Haarlem—Large red, 28 ins.	44.00	44.00
Princess Elizabeth—Rose-pink, 26 ins.	42.00	42.00
Queen of Night—Black, 28 ins.	42.00	42.00
Red Pitt—Scarlet, good force, 26 ins.	46.00	46.00
Rose Copland—Orchid, 24 ins.	42.00	42.00
Sunkist—Lemon-yellow, 28 ins.	44.00	44.00
The Bishop—Blue, 28 ins.	46.00	46.00
Wm. Pitt—Red, 24 ins.	44.00	44.00
Yellow Giant—Deep yellow, 30 ins.	40.00	40.00
Zwanenburg—Pure white, 26 ins.	50.00	50.00
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Mrs. J. T. Scheepers—Yellow, 26 ins.	44.00
Princess Margaret Rose—Yellow, red edge	42.00
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Princess—Immense large scarlet	52.00
Red Emperor—Extra-large, scarlet	55.00

Single Tulips

(In bags of 100)	Top Size	Per 1000
Couleur Cardinal—Dark red	55.00	\$55.00
Keizerskroon—Red with yellow border	55.00	55.00

Double Tulips

Electra—Wine-red	54.00
Mr. Van der Hoef—Yellow	54.00
Orange Nassau—Orange	54.00
Peachblossom—Deep pink	54.00

Parrot Tulips

Top size 13 cm. and up	
Blue Parrot—Heliotrope	42.00
Fantasy—Clear pink with green stripes	46.00
Orange Favorite—Deep fragrant	46.00
Red Champion—Immense, fiery-red	55.00
Sunshine—Golden-yellow	55.00
Texas Gold—Orange-yellow, 24 ins.	44.00
Theresa—Cherry-red (strong)	50.00

Triumph Tulips

Top size 13 cm. and up	Per 1000
Bandoeng—Mahogany-orange, 24 ins.	\$42.00
Crater—Deep crimson-red	44.00
Denbola—Deep amaranth, white edge, 26 ins.	50.00
Edith Eddy—Red with white border	40.00
Elmus—Scarlet, creamy-white edge	46.00
Kansas—Pure white	44.00
Makassar—Deep yellow, 24 ins.	50.00
Paris—Orange-red, edge yellow, 24 ins.	50.00
Red Giant—(The best red)	44.00
Ursa Minor—Golden-yellow	48.00
Wisconsin—Appleblossom, 28 ins.	44.00

Peony-flowering Tulips

Eros—Old rose, very double, 28 ins.	50.00
Livingstone—Bright scarlet, 28 ins.	46.00
Mt. Tacoma—Pure white, 26 ins.	52.00
Nizza—Yellow striped, feathered red, 26 ins.	52.00
Uncle Tom—Dark glittering red, 28 ins.	46.00

SPECIAL NEW HYBRID DARWIN TULIPS

DOVER—Length of petal, 3½ ins., fully open, 8 ins. across, fiery poppy-red, large.
 GENERAL EISENHOWER—Length of petal, 3½ ins., fully open, 8 ins. across, orange-red.
 GUDOSHNIK—Length of petal, 4 ins., fully open, 8½ ins. across, yellow, spotted red, striking.
 PRESIDENT ROOSEVELT—Length of petal, 4½ ins., fully open, 9½ ins. across, warm rose-red.
 HOLLAND'S GLORY—Length of petal, 3½ ins., fully open, 8 ins. across, orange-scarlet.
 RED MATADOR—Length of petal, 3½ ins., fully open, 8 ins. across.
 EMPIRE STATE—Largest and tallest of all. First time out this year, crossing Red Emperor and Red Pitt. 9½ ins. across.

Packed 25 to a bag, \$8.50 per 100.

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Heavy Mother Bulbs	Per 1000
Geranium postez—6 to 8 flowers	\$ 70.00
Golden Harvest—Very large yellow	110.00
Imperator—Large pure white	100.00
King Alfred—Best yellow, frilled	90.00
Mount Hood—Large white	100.00
Mrs. R. O. Backhouse—Pink	110.00
President Lebrun—Bicolor	110.00
Rembrandt—Large yellow—Imp. K.A.	90.00
Scarlet Elegance—Yellow, cup deep orange	90.00
Texas—Double orange	100.00
Thalia—Pure white, 4 to 5 blooms	100.00
Mixture for Naturalizing—D.N. and Round	50.00

CROCUS

	9 to 10 cm.	8 to 10 cm.
Purpureus Grandiflorus—		
Large purple	\$20.00	\$16.00
Mont Blanc—Pure white	26.00	20.00
King of the Striped—White lilac	20.00	16.00
Mammoth Yellow—Golden-yellow	24.00	20.00
Mixture—All colors	18.00	16.00
Snowdrops, nivalis		30.00
Scilla Campanulata—in 3 colors, blue, white, pink		25.00
Chionodoxa Luciliae		20.00

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Bismarck, porcelain-blue	
Carnegie, pure white	
Deift Blue, fine blue	
La Victoire, fine red	
L'Innocence, pure white	
Marconi, deep pink	
Ostara, medium blue	
Pink Pearl, rich deep pink	
Queen of the Pinks, large pink	
Yellow Hammer, golden-yellow	
Top size 18 to 19 cm.	Per 100 \$13.00
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(Grape Hyacinth) Top size	Per 1000
Album—White	\$20.00
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appreciably decreased or slowed. Background radiation bombards everything constantly.

The particles emitted by a radioactive source are colorless, odorless, tasteless, invisible and impalpable. By using a strong source, such as a radium watch dial, one can see that the particles will pass completely through one's hand and still excite the Geiger counter.

Specific Atoms

Atoms of each element emit a characteristic type of particle; these particles may be divided into groups on the basis of their penetration and

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Farncombe Sanders—Rose-scarlet, 28 ins.	44.00
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Greuze—Violet-blue, 26 ins.	40.00
La Tulipe Noire—Purple-black, 26 ins.	44.00
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Pride of Haarlem—Large red, 28 ins.	44.00
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Queen of Night—Black, 28 ins.	42.00
Red Pitt—Scarlet, good forcer, 26 ins.	46.00
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Wm. Pitt—Red, 24 ins.	44.00
Yellow Giant—Deep yellow, 30 ins.	40.00
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Cottage Tulips

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Top Size	
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Keizerskroon—Red with yellow border	55.00

Double Tulips

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Top size 13 cm. and up	
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Orange Favorite—Deep fragrant	46.00
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Sunshine—Golden-yellow	55.00
Texas Gold—Orange-yellow, 24 ins.	44.00
Therese—Cherry-red (strong)	50.00

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Denbola—Deep amaranth, white edge, 26 ins.	50.00
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Elmus—Scarlet, creamy-white edge	46.00
Kansas—Pure white	44.00
Makassar—Deep yellow, 24 ins.	50.00
Paris—Orange-red, edge yellow, 24 ins.	50.00
Red Giant—(The best red)	44.00
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Eros—Old rose, very double, 28 ins.	50.00
Livingstone—Bright scarlet, 28 ins.	46.00
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 PRESIDENT ROOSEVELT—Length of petal, 4½ ins., fully open, 9½ ins. across, warm rose-red.
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 EMPIRE STATE—Largest and tallest of all. First time out this year, crossing Red Emperor and Red Pitt. 9½ ins. across.

Packed 25 to a bag, \$8.50 per 100.

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Heavy Mother Bulbs	Per 1000
Geranium poezia—6 to 8 flowers	\$ 70.00
Golden Harvest—Very large yellow	110.00
Imperator—Large pure white	100.00
King Alfred—Best yellow, frilled	90.00
Mount Hood—Large white	100.00
Mrs. R. O. Backhouse—Pink	110.00
President Lebrun—Bicolor	110.00
Rembrandt—Large yellow—Imp. K.A.	90.00
Scarlet Elegance—Yellow, cup deep orange	90.00
Texas—Double orange	100.00
Thalia—Pure white, 4 to 5 blooms	100.00
Mixture for Naturalizing—D.N. and Round	50.00

CROCUS

	9 to 10 cm.	8 to 9 cm.
Purpureus Grandiflorus—		
Large purple	\$20.00	\$16.00
Mont Blanc—Pure white	26.00	20.00
King of the Striped—White lilac	20.00	16.00
Mammoth Yellow—Golden-yellow	24.00	20.00
Mixture—All colors	18.00	16.00
Snowdrops, nivalis	30.00	
Scilla Campanulata—in 3 colors, blue, white, pink	25.00	
Chionodoxa Luciliae	20.00	

HYACINTHS

(Packed 50 in a bag)

Bismarck, porcelain-blue	
Carnegie, pure white	
Deift Blue, fine blue	
La Victoire, fine red	
L'Innocence, pure white	
Marcot, deep pink	
Ostara, medium blue	
Pink Pearl, rich deep pink	
Queen of the Pinks, large pink	
Yellow Hammer, golden-yellow	
Top size 18 to 19 cm.	Per 100 \$13.00
Extra bedding size 15 to 16 cm.	8.00

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	10 to 11 cm.	9 to 10 cm.	8 to 9 cm.
Wedgwood—Light blue	\$50.00	\$35.00	\$20.00
Golden Harvest—Yellow	25.00	18.00	12.00
H. C. Van Vliet—Blue	25.00	18.00	12.00
Imperator—Deep blue	25.00	18.00	12.00
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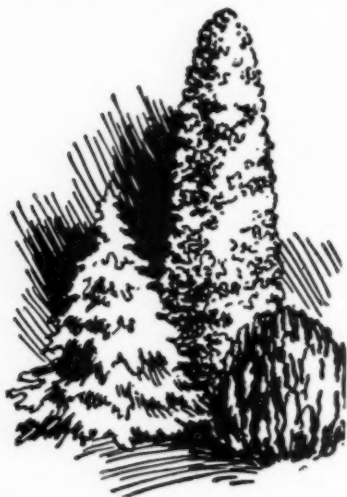
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other factors. "Weak" particles, known as alpha particles, will not penetrate thin tissue paper, while "stronger" particles, known as beta particles, may penetrate several thicknesses of tissue paper, and "heavy," or gamma rays, may penetrate one foot to several feet of concrete. The particles can be detected and differentiated by placing various thicknesses of aluminum, a good particle absorber, between the radioactive source and the sensitive Geiger counter.

When a few radioactive atoms are mixed with many nonradioactive atoms, all of the same element, the radioactive elements function and travel inside the plant in an identical manner as the nonradioactive atoms. In other words, if one adds a small amount of radioactive superphosphate to a bag of regular superphosphate, mixes the material well and applies it to a Colorado blue spruce, one can measure the rate and amount of phosphate absorbed by the plant from the soil with a Geiger counter. If the mixing is thorough, one is able to measure the uptake of both the radioactive and non-radioactive phosphate, and all of the fertilizer need not be radioactive.

Use of Tracers

The same principle is used as that of putting a bell on a single cow. In general, a herd stays together, and if one can bear the bell, he can locate the herd, not every animal in the herd needs to be belled. The same is true using radioactive atoms. When radioactive atoms are used in this manner, they are termed "radioactive tracers." In other words, one can trace their pathways, and if appropriate techniques are used, one can trace their function. Finding a needle in a haystack by use of radioactive tracers becomes an easy task.

All plants require certain minerals, which we know as "essential elements." Practically all of these elements can possess radioactive atoms, with the exception of nitrogen. Consequently, if he desires, one can use radioactive atoms of phosphorus as superphosphate; potassium as muriate of potash; calcium as lime; sulphur as sulphur dust, and many others as tracers.

To be sure it is unlikely that nurserymen will ever use the radioactive atoms directly; they will continue to be tools in the hands of qualified researchers. Thus the word potential implies indirect value to be derived by the nurseryman through the researcher.

One of the most important applications of radioactive atoms today

SPECIALS

SEEDLINGS:

	Per 100	Per 1000
Magnolia grandiflora (Southern Magnolia),		
1-yr., 2 to 4 ins.	\$ 5.00	\$ 40.00
2-yr., 6 to 12 ins.	8.00	60.00
Magnolia glauca , 2-yr., 4 to 6 ins.	15.00	120.00
Mahonia bealei (japonica), 2 to 4 ins.	10.00	80.00
Berberis thunbergii atropurpurea ,		
1-yr., 6 to 9 ins.	10.00	80.00
Chinese Chestnuts , 1-yr., 6 to 9 ins.	12.00	100.00
Forsythia Spring Glory , 6 to 9 ins.	40.00	
Spiraea frobeli , layers, 6 to 9 ins.	40.00	
Spiraea vanhouttei , layers, 6 to 9 ins.	40.00	
Spiraea thunbergii , layers, 6 to 9 ins.	40.00	
Weigela vaniceki , 6 to 9 ins.	80.00	
Viburnum opulus sterile , 4 to 6 ins.	100.00	
Viburnum tomentosum plicatum , 4 to 6.	120.00	
Viburnum burkwoodii , 4 to 6 ins.	150.00	
Viburnum rhytidophyllum , 4 to 6 ins.	100.00	

	Per 100	Per 1000
Viburnum carlesi (Fragrant Snowball),		
9 to 12 ins.	\$250.00	
Ilex rotundifolia , 6 to 9 ins.	120.00	
field-grown, T., 6 to 9-in. spread	230.00	
field-grown, T., 9 to 12-in. spread	400.00	
Ilex microphylla , 6 to 9 ins.	120.00	
Juniperus hetzi , field-grown, T., 6 to 9-in. spread	250.00	
Juniperus depressa plumosa , field-grown, T., 6 to 9-in. spread	250.00	
Euonymus coloratus , 2 1/4-in. pots	150.00	
Vinca minor , 2 1/4-in. pots	150.00	
Vinca minor , 1 to 3 leads, suitable for potting	20.00	
Calleryana Pear , seeds (These seeds produce virus-free seedlings on which to propagate pear varieties), \$50.00 per lb.		

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is their use in determining the availability of particular types of fertilizers to specific plants. It can be determined whether mono-ammonium or diammonium phosphate feeds a flowering crab apple best. By use of radioactive atoms, this can be accomplished not only easily but also efficiently.

Placement of Fertilizers

Another important contribution of radioactive atom utilization is the ease with which one can determine the proper placement of fertilizers. The proper placement—banding, broadcasting or injecting—of fertilizers often means the difference between shrub response or complete waste of the applied fertilizers. It should be pointed out that little study has been made on nursery crops, but a great deal has been accomplished with food crops. No doubt this information regarding specific nursery crops will become available to nurserymen in the near future.

Sometimes it is not only important to understand where one should place fertilizers, but it is also necessary to understand specifically where the fertilizer is distributed throughout the plant. This can be demonstrated by feeding radioactive phos-

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5 to 6 ft., B&B	4.50	4.00
6 to 8 ft., B&B	6.50	6.00
8 to 10 ft., 1 1/4 to 1 1/2-in. cal., B&B	8.00	7.50
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phate to only a portion of the roots of one tomato plant and placing all the roots of another tomato plant in a radioactive phosphate solution. A check of the latter plant will show all of the leaves radioactive, while on the plant having had only a part of its roots in radioactive phosphate, some of the leaves will not show radioactivity. Such a test illustrates the need to fertilize the entire root system whenever possible.

Foliar Applications

Information on foliar applications of nutrients can most easily be obtained by using radioactive tracers. This technique not only allows a convenient method of determining how much material the leaves and stems absorbed, but allows one to trace where the material is transported and ultimately utilized. Foliar feeding today is in its infancy, but from preliminary results, it appears that it may become a routine method of applying small quantities of fertilizers to nursery crops.

Perhaps the most important use of radioactive tracers to date has been to determine just how photosynthesis in plants takes place. The conversion of light energy into the chemical energy, known as food has tremendous possibilities. Only in the past few years, through the use of radioactive tracers, has it been possible to understand partially the process of photosynthesis.

Such information is basic and offers only a potential to the nursery industry. But as the basic processes in plants are better understood, it may be possible to treat nursery crops so as to increase the yield of the marketable product.

Another important utilization of the radioactive atom or tracer has been to help synthesize and study new types of herbicides for use in nurseries as well as on food crops. Again, tracers are used as research tools, assisting workers to formulate an herbicide to do a specific weed-control job. The same statements can be made for the improvement of fungicides and insecticides. In fact, most of the herbicides, fungicides and insecticides nurserymen are using today have been studied and improved by using the radioactive atom.

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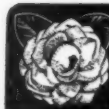
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Highway Planting Discussed at Ohio Summer Meeting

By L. C. Chadwick

The summer meeting of the Ohio Nurserymen's Association, held at Sandusky, O., August 12 to 14, was a time for companionship and recreation. Over 250 nurserymen registered for the affair, which opened at the Sandusky Conservation Club Tuesday afternoon, August 12, with games for all ages. Horseshoe pitching and trapshooting proved especially popular with the men.

Executive Committee Meets

At the executive committee meeting, held Monday evening and nearly all day Tuesday, R. B. Stout, chairman, Ohio state highway committee, reported efforts to increase highway planting beyond simple grassing of right of ways and to develop long-range plans. He is trying to have the bonus money from antibillboard features of the federal highway law applied to highway planting. Each member can help develop a grass-root drive for this, as these plans are made on a local (division) basis. H. C. Horton reported on the relations between the O. N. A. and the Ohio roadside council. It was decided to continue to work closely with the council on the development of a highway planting program.

A constitution committee was appointed, consisting of William Cole, Cole Nurseries, Painesville, chairman; Frank Turner, Berryhill Nursery, Springfield, and Jack Siebenthaler, the Siebenthaler Co., Dayton. The committee will examine the O. N. A. constitution and recommend any changes that may be needed. The development of a film library on various promotional subjects was proposed and is being considered. The incorporation of the Ohio Nurserymen's Association as a nonprofit corporation, long under consideration, will be carried out shortly.

David Dugan, Dugan Nurseries, Perry, reported on the need for more students in horticulture at Ohio State University. A folder is available and a state-wide group of counselors will be organized to help promote the school of horticulture. Secondary school organizations and county extension agents will also be asked to help. At the close of the

[Continued on page 106]




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PLANT NOTES HERE AND THERE

By C. W. Wood

Campanula Lactiflora

While looking over some travel notes made several years ago, I came upon one that brought back pleasant memories of an Ohio garden where *Campanula lactiflora caerulea* had been used lavishly because of its June and July flowering. The milk-white type *alba*, was also present, but the pale blue flowers of variety *caerulea* were far more effective in the landscape and more pleasing when cut. *Caerulea* was likewise grown in large pots for porch and terrace decoration at the usual flowering season, which, in the light of present interest in container-grown flowering plants, gives me the impression that the plant would be a valuable asset in the hands of the careful grower of that class of stock. It is a little tall, of course, for the mass grower of container stock, but that should make it even more valuable to the careful, experienced grower.

There is some variation in the plants sold as the type and in varieties *alba* and *caerulea*, in both flower color and height of plants, when they are grown from seeds. In my trials through the years, field-grown *caerulea* gave plants from two to three feet in height, and the container-grown stock mentioned was lower than that. However, there is a form sometimes available from European sources under the name *C. celtidifolia* that may double that stature under high culture. It is easily grown from seeds.

Thoughts on Hepatica

The remarks will be restricted to the two American kinds, *Hepatica americana*, the plant that I long knew as *H. triloba*, and *H. acutiloba*. They can be considered the same so far as garden effects are referred to, but there is likely to be some difference in cultural requirements, and the opinions of the systematists must be considered, too.

When rightly used, the hepatica is, or could be, one of the most important spring flowers. In one garden I remember they were planted in drifts of hundreds of plants in a bewildering range of shades, from pure white through bluish and deep pink, lavender, lilac and violet, to blue of many hues. The over-all effect was breathtaking. Of course, not all gardens have the room for plant-

ings of that magnitude, but in the opinion of many experienced gardeners, hepaticas should be used as lavishly as space permits. And if I were to start a neighborhood nursery again, one of the first things I should do would be to make a collection of hepaticas, especially of the clear pink and pale blue varieties.

There is much confusing talk in the literature about hepatica culture. One authority speaks of the plants as being definitely lime-lovers, when, as a matter of fact, we find one kind, *H. acutiloba*, growing in quite acid soil, as on the pine plains in the section with which I am most familiar. I think it would be nearer the truth to say that the genus as a whole is

quite tolerant and will make itself at home either in alkaline or slightly acid soil. It is apparent, however, to this observer, of the plants in nature that they do best in a soil rich in humus. Their most effective use in gardens that I have noticed was one planting where they were placed in wide drifts on a rock slope in half-shade.

There is a great difference in the blooming season of hepaticas. Generally speaking, the white ones are the first to bloom, then the blue and pink. And if one is fortunate enough to have the double-flowered kinds, they will conclude the procession.

The kinds with double flowers do not generally seem so robust as the

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singles, the double blue being especially delicate and, consequently, perplexing at times. Named forms are grown from divisions; otherwise, they are more rapidly and usually best grown from seeds sown as soon as they have become ripe in an outdoor bed.

Bladder Senna

When a customer complains of the scarcity of summer flowering shrubs, one may remind him of the bladder senna, *Colutea arborescens*. The bladder senna is a shrubby legume from southern Europe and northern Africa, which accounts for the fact that it is not fully reliable here in northern Michigan, though it is usually root hardy in our coldest winters. It is said to grow to 15 feet in height in warmer sections, under good culture, but even there most gardeners like to keep it at four or five feet, which is easily accomplished by cutting it back in early spring. Even severe pruning, if done in early spring, will not reduce the number of flowers, because these are produced on the current season's growths. It commences to bloom in June, continuing well into summer, the yellow pea flowers, sometimes blotched with reddish-brown, and curious bladderlike pods being pres-



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2-yr., T., 18 to 24 ins., br.		15.00

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1-yr., T., 5 to 6 ft., br.		25.00

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S., T., 3 to 4 ft.		20.00

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18 to 24 ins.	1.50	1.40	1.25	
24 to 30 ins.	1.75	1.65	1.50	
3 to 4 ft.	4.00	3.85	3.50	
4 to 5 ft.	5.25	4.95	4.50	
5 to 6 ft.	7.00	6.60	6.00	
6 to 7 ft.	8.80	8.30	8.00	

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ent at the same time in the latter part of the blooming season. Another ornamental feature of the plant, not often mentioned in the literature, is the curious ruddy hue often assumed by the pods as they age. Its pretty, legume leaves are another attraction.

Although it will thrive in many garden situations, it seems to do best in a sunny spot in well-drained soil. In all except the warmer sections, it requires a sheltered spot. It can be grown from seeds, planted in spring.

Achillea Filipendulina

I received a letter from a studious neighborhood nurseryman in which he wondered why more growers did not take advantage of the sales possibilities of Achillea filipendulina. As I have always had the same thought in mind, I turned to my file of this plant and found that I had asked myself the same question about 15 years ago, when I set down the following observation.

"Why is Achillea filipendulina not more often seen?" the note asks. "I just went through my catalog file," it continues, "and found only three sources of supply." Even if I missed a few, the figure still would indicate an unwarranted apathy toward one of our better accent plants. If you would know what I mean, plant a vigorous division of this achillea in fertile soil in a sunny border and watch it shoot up to a height of five feet, and top that growth with large, rounded corymbs of yellow in summer. The almost everlasting flowers continue presentable over a long period. The plant can fill many roles in the landscape in addition to its value as an accent plant in the mixed border. For instance, it can be used in a group on the lawn, as a specimen plant and as a divider where a hedge of woody plants is not desired. It is grown from seeds or divisions.

Annual Grasses

An inquiry for a few annual grasses that cut well and may be used either in the fresh state or dried brings out the following thoughts. These grasses are now highly popular with flower arrangers and, consequently, are in heavy demand. It might pay neighborhood growers to investigate them. These notes are not intended to be complete.

Two quaking grasses, Briza maxima and B. minor, both European annuals, are among the most popular. The former grows up to two feet in height and has several heart-shaped heads of paperlike bracts on a stalk. The latter, B. minor, does



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DARWIN TULIPS:		
City of Haarlem	11 to 12 cm.	10
Eclipse	11 to 12 cm.	10
Farncombe Sanders	11 to 12 cm.	12
Margeaux	11 to 12 cm.	10
Northern Queen	11 to 12 cm.	10
Princess Elizabeth	11 to 12 cm.	12
Prunus	11 to 12 cm.	12
Philip Snowden	11 to 12 cm.	12
Queen of Night	11 to 12 cm.	12
Scotch Lassie	11 to 12 cm.	10
The Bishop	11 to 12 cm.	10
Zwanenburg	11 to 12 cm.	12
Mixed	11 to 12 cm.	12
COTTAGE TULIPS:		
Golden Harvest	11 to 12 cm.	12
Princess Margaret Rose	11 to 12 cm.	12
BREEDER TULIPS:		
Dillenburg	11 to 12 cm.	12
Georges Grappe	11 to 12 cm.	10
SPECIES TULIPS:		
Fosteriana Red Emperor	11 to 12 cm.	8

PARROT TULIPS:

	Size	Bulbs Per Box
Blue Parrot	11 to 12 cm.	10
Fantasy	11 to 12 cm.	10
Sunshine	11 to 12 cm.	10

HYACINTHS:

	Size	Bulbs Per Box
City of Haarlem	15 to 16 cm.	6
Grand Maitre	15 to 16 cm.	6
La Victoire	15 to 16 cm.	6
L'Innocence	15 to 16 cm.	6
Pink Pearl	15 to 16 cm.	6
Mixed	15 to 16 cm.	6

CROCUS—Mixed

	Size	Bulbs Per Box
MUSCARI—Armeniacum		
Improved Heavenly Blue	8 to 9 cm.	25
SCILLAS—Sibirica	7 to 8 cm.	20

NARCISSUS:

	Size	Bulbs Per Box
Dick Wellband (Large Cupped)	D.N. 2	8
King Alfred	D.N. 2	8
Scarlet Elegance (Incomparabilis)	D.N. 2	8
Texas (Double)	D.N. 2	8
Mixed	D.N. 2	12
IRIS	6 to 7 cm.	15

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not ordinarily exceed fifteen inches, but the hearts are much more numerous. Both are useful fresh and dried and are easy to grow.

One of the brome grasses, *Bromus brizaeformis* (the specific name will tell you what to look for), known in gardens as quake grass, is also popular among users of dried materials. It grows to two feet tall, with ornamental, flat, drooping heads.

The rabbit-tail grass, *Lagurus ovatus*, from Europe, is a popular ornamental annual. I often used to see it grown in pots and window boxes for house decorations, a practice that could well be revived. It

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3 to 4 ft., 7/16-in. cal.	.45	.35
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5 to 6 ft., 11/16-in. cal.	.65	.60
6 ft. and up	1.00	..

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is also useful, dried or fresh, in bouquets, growing about a foot tall and freely producing its small, feathery, white, woolly, globe-shaped heads.

Although it is a tender perennial, the Natal grass, *Tricholaena repens*, is used as an annual, being the source of much good cutting material. It consists of loose panicles to eight or 10 inches in length and as much as three inches in width, silky in texture and rose-pink in color, turning to lavender in drying. It is said to grow nearly four feet tall in sections where it is hardy, but it does not do that well where used as an annual, seldom exceeding two feet in my trials, as I remember it, though I do not find it mentioned in my notes.

Sand Phlox

When one reaches the subulate phloxes, he is really treading on treacherous ground so far as names are concerned. Because I am not enough of a botanist to tell you how to differentiate between *Phlox bifida*, *P. nivalis*, *P. stellaria*, *P. subulata* and perhaps others, including the disputed *P. setacea*, I shall not attempt the task, but let the systematist do that. I should like to dwell briefly, though, on the first of that list, *P. bifida*, the sand phlox, as one is likely to find it in nurseries.

There are several good things to be said about garden forms of the plant, along with a few of a less complimentary nature. Of the latter, it may be mentioned that its worst fault, as it showed in my trials, was the large number of poor colors when grown from seeds. Some writers on the subject are positive in their statements that this plant never shows any of the red-purple shades that are characteristic in other members of the subulate group. If that is true, all my material must have become contaminated after it left nature; in any event, a half or more of all the seedlings of *P. bifida* that I ever matured were of undesirable shades, and many were downright ugly in their dirty purplish way. Many were what nurserymen are prone to call rose-colored, which seems to be a euphonious way of saying dirty rosy-purple or magenta. But there are many good colors, including violet, blue, lavender and white, in the species as it is available in gardens. And the best forms are really good landscape material, which will be looked at more than once by admiring visitors to a nursery. All will also be plants of easy-going temperament.

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8 to 10 ft.	2.75	2.60
10 to 12 ft.	3.75	3.60
Maple, Norway		
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8 to 10 ft., 1 1/4 to 1 1/2 in. cal.	4.75	4.50
10 to 12 ft., 1 1/2 to 2 in. cal.	6.50	6.00
2 to 2 1/2 in. cal.	9.50	..
Maple, Sugar		
6 to 8 ft.	3.25	3.00
8 to 10 ft., 1 to 1 1/4 in. cal.	4.25	4.00
8 to 10 ft., 1 1/4 to 1 1/2 in. cal.	5.25	5.00
10 to 12 ft., 1 1/2 to 2 in. cal.	7.00	..
Oak, Pin		
6 to 8 ft.	3.50	3.25
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garden plants in the trying climate of the country from the Rockies to the Atlantic ocean. The common name, sand phlox, reveals the plant's needs as to soil, but does not tell how much drought and other adverse growing conditions it will endure. Another point in its favor is that it is a stay-at-home, except for some self-sowing. For uniform color, it should be grown from cuttings of new growths in early summer or September, the pieces being rubbed off with a heel.

Since reading the foregoing, which was based entirely on garden material that travels under the name of *P. bifida* and more often than not is probably the supposed hybrid, *P. stellaria*, I realize that growers looking for a good dwarf phlox should search out real *P. bifida*, as it occurs in nature from southern Michigan to Tennessee to Kansas.

Trichocereus Spachianus

A Pennsylvania reader writes: "My mother, who moved to California a few years ago, writes so enthusiastically about a cactus, *Trichocereus spachianus*, and its usefulness in the landscape that I am wondering if it could be used here in eastern Pennsylvania. Could you give me any information on the plant?"

Though I have no personal experience with the plant, the literature is full of references to it, and I have observed it rather carefully on several occasions. It comes from western Argentina and is used in the open in California and along the Gulf coast; I should not expect it to be hardy in Pennsylvania, though it could be handled under the following simple schedule: It should be grown indoors in large pots or cans during the frosty months and moved outdoors to a sunny spot in spring. The containers may be plunged in the landscaped garden or handled in the usual way in the salesyard. In either case, it should be kept on the dry side, though not desert dry.

As the correspondent's mother reported, it grows to three feet in height in California, but it has not exceeded two feet in the pot-grown specimens that I have seen. There are several branches from the base in old specimens, and the prominent ribs are clothed in pretty, though vicious, spines. Like many of the cereus and trichocereus species, it is spectacular in flower, with immense (six inches across, eight inches long and filled with golden stamens) blossoms of creamy-white having a heady fragrance, from midspring until early June, as I remember it in the Chicago park districts.

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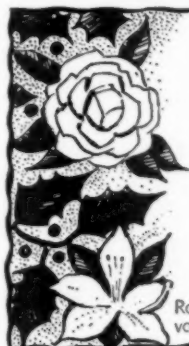
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BOOK REVIEWS

GROWERS' REFERENCE BOOK

Growers of greenhouse crops have long been familiar with the book, "Commercial Flower Forcing," the new sixth edition of which was recently issued by McGraw-Hill Book Co. at \$9.50. The authors, Alex Laurie, D. C. Kiplinger and Kenard S. Nelson, provide here both a college textbook and a reference work for commercial growers.

The book discusses all phases of growing under glass. While two thirds of the illustrated text of about 500 pages is devoted to cultural pointers on specific crops and marketing, the first part of the volume discusses basic factors, concerning structures, heating and cooling methods, soils, fertilizers, plant growth, reproduction techniques and other topics. Subjects introduced since the fifth edition was printed in 1948 include air conditioning of greenhouses and plastic greenhouses. Much of this fundamental material will prove useful to the nurseryman or any other grower who has problems of soil preparation, water adaptation and propagation. The terminology throughout conforms to scientific standards, but is fully understandable to the commercial operator without technical training. A comprehensive index to subjects is a useful feature.

MORE ON AFRICAN VIOLETS

For enthusiasts in growing and exhibiting the saintpaulia, a book entitled "1001 African Violet Questions," edited by Helen Van Pelt Wilson, has just been published by D. Van Nostrand Co., at \$4.95. As the cover and the title page of the book indicate, the questions were answered by 12 experts, well-known names in the saintpaulia world either by professional connection or through amateur exhibitions.

The questions are presented by sections. The topics of these sections are popularity; hybridizing; growing for blooming; miniatures; soils and fertilizers; potting; propagation; greenhouse growing; growing for exhibition; organizing a show; information for exhibitors and judges, and, for a final catch-all, troubles, controls and cures. There are actually 1,001 questions included in the book of 380 pages, and the answer to each is identified by the initials of the expert who provided the reply. In-

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structive drawings by Judith Hirtle occupy 18 pages. An index adds to the book's usefulness.

FENCES AND GATES

The revised and enlarged edition of the Sunset book, "How to Build Fences and Gates," just issued by the Lane Publishing Co., at \$1.75, not only explains the planning, construction and maintenance of all types of fences, but also considers their places in landscaping plans. While the amateur gardener will value the book for its technical instruction, landscape nurserymen can gain many ideas from the 305 illustrations included in the 112-page book. Many of these depict fences and gates as integral parts of an established garden, showing how these structures in a variety of materials have already been used.

ROCKY MOUNTAIN GARDENS

Since 1951, gardeners in the Rocky mountain area have been helped by George W. Kelly's book, "Rocky Mountain Horticulture Is Different," of which 10,000 copies were sold. More help for them and for others among gardeners in that area now appears in an enlarged book, "How to Have Good Gardens in the Sunshine States," in which Mr. Kelly gives practical advice on the design of gardens and on plants tolerant of conditions in the semiarid states of the west, where sun is plentiful and rain is not. This paper-bound book of 212 pages is packed full of information regarding plants suitable for different parts of the mountain states and those adjacent. Not only are the designing of gardens and the selection of plants discussed, but also the methods of culture necessary to their successful production. Illustrations are numerous, and 18 of them are in natural color.

The author is well known for his long association with the nursery business in Colorado, as well as for his guidance of gardeners during the years he was editor of the Green Thumb, official bulletin of the Colorado Forestry and Horticulture Association. He has won several awards for his achievements in assisting gardeners in an area where horticulture must be practiced differently than elsewhere. At present, George W. Kelly operates the Cottonwood Garden Shop, 4849 South Santa Fe drive, Littleton, Colo. To keep the price as low as possible, he published the book himself, and copies are available from him in two bindings, at \$3 and \$3.25, plus tax and postage.

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SAN DIEGO CHAPTER

The July meeting of the board of directors of San Diego chapter, California Association of Nurserymen, was held at the home of Craig Smith, San Diego, treasurer.

Ed Harrisburg, Germain's, San Diego, reported on prizes won by the chapter at the county fair, held recently. He said that county fair workers reported heavy pilfering this year, perhaps because of the reduced number of guards and the lack of exhibitors' badges.

Plans were made for the midsummer membership meeting, and Mission Valley Country Club was chosen for the site. Torrey Pines Nursery and Glenview Nursery, two nonmember firms, were to receive invitations. It was suggested that an installation ceremony be planned for new members.

The election of officers was scheduled to be held at the general meeting August 28 at Park Manor, San Diego. Nominations for officers were Phillip Seeman, Seeman's Nursery, San Diego, president; Moto Asakawa, vice-president; Ada Perry, Walter Andersen Nursery, San Diego, secretary, and Craig Smith, treasurer. Directors nominated were Walter Andersen, Walter Andersen Nursery; Ed Harrisburg, and Mrs. R. C. Jensen. Directors Frank Dawson, and Alfred Antonicelli, Washington Street Nursery, San Diego, have another year to serve.

Ada Perry, Sec'y.

CENTINELA CHAPTER

The meeting of the board of directors of Centinela chapter, California Association of Nurserymen, was held at the home of Bo Packard, Capel-Klang Co., Los Angeles, August 11. Vice-president Reg Whitney, Ladera Garden Shop, Lomita, called the meeting to order in the absence of President George Schmidt, Frontier Nursery, Redondo Beach.

In answer to a request by William A. Rodman, general manager of the California flower show, George Schmidt, and Richard Oehlman, of the Ladera Garden Shop, were appointed to sit on the flower show committee. Jim Perry, Perry's Plants, Montebello, was nominated for the

yearly P. C. N. award, for his work on ground covers. Several nurseries will be checked at the request of Elmer Merz, C. A. N. executive secretary, to see if they will renew their membership. Wilson Fuchsia Gardens, Malibu, owned by William E. Wilson, were accepted for membership.

Reg Whitney suggested that the gavel for retiring presidents be replaced by a plaque, to be given at the time of inauguration. The plaque could be displayed at the owner's place of business. Keiji Yata, Yata Nursery, Torrance, will investigate the size, design and wording of the plaque and report on it at the next meeting.

Final nominations and election of officers were scheduled to take place at the next regular meeting, to be held at Haji Baba's cafe, Inglewood, August 21. The next board meeting was scheduled for September 8 at

the home of George Schmidt, Torrance. The September membership meeting, with the inauguration of new officers, will be held September 25, at the Palms, Torrance. Elmer Merz was requested to aid with the program. Bo Packard, Sec'y.

BEGIN TRAINING SURVEY

A state-wide nursery survey was recently begun by the University of California department of education at Davis as groundwork for training workers needed in the booming nursery industry. Two members of the university staff are studying the operations and interviewing the proprietors of 300 California nurseries in order to determine the types of jobs the industry offers and the training that the state's high schools and colleges should provide. Orville E. Thompson, assistant professor of education at Davis, is directing the project in cooperation with the California Association of Nurserymen, the state bureau of agricultural education and the bureau of business education.

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Modern Uses Of Plant Materials

By Vernon T. Stoutemyer

The creation of new markets for nursery stock will depend to a great extent on the development of effective and appealing methods of using plants. The introduction of new plants always helps to create interest, but, in addition, a great deal can be done by cleverness in using the many good plants already in the nursery trade.

There has been a great activity in plant exploration during the past half century, but most of the attention until recently has been focused on economic crop plants. We can expect many interesting new additions, since more attention has been shifted to ornamentals in recent plant hunting.

Perhaps even more can be expected through plant breeding. This activity is fast becoming recognized as a definite profession, which requires advanced training and considerable innate ability. The American plant patent law has had a beneficial effect and has created many new positions in the field of horticultural plant breeding.

New Rose Varieties Flourish

The rose-growing industry has been a conspicuous example of success, and today the patented rose varieties are largely displacing the excellent older varieties, since the new introductions often represent real advances. However, with most other nursery plants, the great number presents a difficulty in attaining a sales volume in any one species which would justify many patents.

A glance at the record of plant patents for 1957 tells the story. Fifty-three of these were on roses, as might be expected. The commercial florists' crop plants had a fair repre-

An address, "Modern Uses of Plant Materials," delivered by Vernon T. Stoutemyer, chairman of the department of floriculture and ornamental horticulture, University of California, Los Angeles, at the short course of the Missouri State Nurserymen's Association held last summer at the University of Missouri, Columbia.



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Bred for American Gardens

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THE GRAFTER'S HANDBOOK

By R. J. Garner

Covers almost every known method of grafting. Describes seeding and vegetative propagation of rootstocks, handling of scion wood, choice and use of tools. 223 p. with 24 p. of photos. (1949). \$4.50, postpaid.

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343 S. Dearborn St. Chicago 4, Ill.

—FINEST QUALITY—

AZALEAS—HOLLIES
RHODODENDRONS—ROSES

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Wholesale Growers

12492 Pipeline Ave. Chino, Calif.

sensation. Among herbaceous perennials there were three dicentras, two day lilies and two iris varieties. This is surely not an impressive number. For the mild climate zones, there were two camellias, two fuchsias, one pyracantha and one escallonia. Among the hardy shrubs, there were two privets, three locusts, one taxus and one spiraea.

The selected plant list of the local nurseryman should attempt to take advantage of the climatic and seasonal characteristics of the region. Seasonal flowering, attractive fruits or berries (especially in winter), fall coloration and unusual bark character or form are all features which should be exploited to the utmost.

Nurserymen should keep in touch with the arboreta and botanic gardens of the area, particularly those active in the testing and introduction of new plant forms through clonal propagation. Notable work has been done at the Morton Arboretum, Lisle, Ill.; the Saratoga Horticultural Foundation, Saratoga, Calif.; the Rochester, N. Y., city parks; the Arnold Arboretum, Jamaica Plain, Mass., and the National Arboretum, Washington, D. C., to mention only a few.

Superior forms of a long list of trees are now available, including oaks, magnolias, crab apples, ginkgos, sweet gum and many conifers. Many of these are obtainable in clones and will maintain a definite form of growth, which is highly advantageous from the standpoint of the landscape architect.

These plants cannot be marketed profitably unless the consumer demand is fostered in advance. Fortunately, there has been a notable increase in the number of garden editors on the daily newspapers. The hobby gardening journals and those devoted to home development, as well as persons who conduct gardening programs on the radio and television, are eager for information on new and superior plants that can be obtained commercially. Nurserymen should take pains to see that they are well informed.

The rapid development of industrial planting is providing an excellent new outlet for nursery stock. The American Association of Nurserymen has carried out a highly successful promotional program along this line. The idea is gaining acceptance rapidly in many sections. Firms are noticing the benefits in improved morale of their employees and in reduced labor turnover, as well as in improved public relations.

Some new factories, offices and similar buildings are being erected



Oregon English Holly

TEUFEL'S "HYBRID" PREMIUM GRADE

SELECTED DARK GREEN HEAVILY BERRIED SPRAYS

10 lbs. per carton	\$ 7.50
25 lbs. per carton, long	18.75
50 lbs. per carton, long	37.50

SELECT GRADE

GLOSSY green foliage with lots of red berries

\$6.50 per 10-lb. carton \$60.00 in lots of 100 lbs.

Selected shorter sprays also packed in:

ONE-POUND BOXES

\$10.80 per carton of 12 1-lb. boxes

\$13.50 per carton of 12 1-lb. boxes

WITH TRANSPARENT WINDOW

berried green

berried variegated

thornproof transparent bags

HALF-POUND BOXES

\$13.50 per carton of 24 ½-lb. boxes

\$16.00 per carton of 24 ½-lb. boxes

Approx. ½ lb. each—berried green, holly, \$16.00 per carton of 25 bags

TEUFEL'S VARIEGATED HOLLY

Not many berries on the Variegated this year

10 lbs. per carton\$8.75

25 lbs. per carton, long, \$21.85

50 lbs. per carton, long, \$43.70

All F.O.B. Portland, Ore.

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GEORGE TEUFEL'S HOLLY FARM

(More than 150 acres of producing holly orchard)

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ILLUSTRATED PRICE LIST ON REQUEST

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CASH WITH ORDER, PLEASE

with surprisingly large budgets for planting. The most progressive architects are now insisting on allocations of space for indoor and outdoor plants in their buildings.

Even in crowded business sections there is room for planting boxes where plants suitable to the region and also to the site exposure can be used. These are common in coastal California, but are beginning to appear in many other parts of the country. They can add immeasurably to the charm of our cities by softening the coldness of vast stretches of masonry.

The lavish use of interior decorative plants in hotels, restaurants, ship and airline ticket offices and department stores in certain cities would not be continued if it did not pay. Businessmen are just beginning to realize that planting adds to the value of commercial as well as residential real estate.

Street tree plantings have been notably successful in the downtown areas of New York, N. Y., and Los Angeles, Calif. Commercial signs are not necessarily hidden when suitable forms are chosen. In the latter city, the improvement in parts of the area has been so striking that many business firms are now planning to

TREE PEONIES

For Delivery November, 1958

1 and 2-yr. named grafts in red, white, pink, purple and variegated.

55c and 90c each per 1000 respectively. Price and delivery subject to being unsold, so rush 25% with order or satisfactory credit reference.

LAKE SAMMAMISH EVERGREEN NURSERY

6127 Highway 99, S. Everett, Wash.

join the program, although expensive reconstruction of the street area is always necessary.

Perhaps the outstanding achievements in gardening of the next few decades will be professional. Many will be made in connection with factories, hotels, garden apartment developments, civic centers, schools and freeways.

No one country or area has any monopoly on the imaginative and effective use of plants. By avoiding the stereotyped and conventional types of plantings, a greater interest in plants as one of the art media surrounding daily living can be fostered. The nurseryman who is traveling with notebook, sketch pad and camera in any part of the country

Jan de Graaff's

OREGON BULB FARMS

P. O. Box 512

GRESHAM, OREGON

Lilies

Daffodils

will not only learn a great deal about plants, but will also become aware that there are strides being made in landscape art.

Perhaps the one weak point in the education of potential users of nursery stock is that little is being done among young people or children to foster an appreciation of daily living with plants. As a result, ornamental horticulture is still a much undeveloped and unappreciated field in America. The florists recognize the importance of reaching young people in the schools and are now trying an experimental program of education in a number of cities on a pilot basis.

One of the hopeful aspects about the growing interest in the use of

CONTAINER STOCK



You can be sure of receiving the well-grown plants that you would expect when you order from our complete line of container-grown ornamentals—trees.

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For California's Finest Container-Grown Nursery Stock It's

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FRUIT TREE SEEDLINGS
FLOWERING ORNAMENTAL TREES
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Constant Vigilance Results
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Combination carloads to eastern
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Top-quality, field-grown patented and
standard roses.

Write for list and prices.

MAYWOOD ROSE NURSERY
Rt. 2, Box 880 Roseburg, Ore.

Steele's New • Enlarged • Revised
1958 Handbook of

PANSY CULTURE only **50c**

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2715 S. E. 39th Ave. Portland 2, Ore.

plants in public places is that every successful installation immediately becomes a living and growing advertisement of the idea. Inevitably, the idea catches on and spreads. Is there any better way to create new outlets and markets for the products of the nurseryman?

SPRAY CORRECTION

In a report of growth inhibitor tests conducted at the University of California on ground covers and other ornamentals, using sprays of maleic hydrazide, concentration figures published on page 86 of the August 15 issue of this magazine were incorrect. Instead of the 9 to 31 per cent concentrations of actual maleic hydrazide cited as being safe for use, the formulation should have read 0.09 to 0.31 per cent. As originally given, the spray would be harmful to plants.

OREGON NOTES

Tom Halvorson is now managing the Seven Dees Nursery for Mr. and Mrs. Robert Snodgrass.

A grass fire recently spread to a large pile of greenhouse flats at the J. Frank Schmidt, Jr., Nursery, Troutdale, Ore., and then destroyed the ends of the greenhouses alongside which the flats were stacked. Damage to the greenhouse was covered by insurance, but the loss of the flats was not.

Mr. and Mrs. Lowell Cole, Oliver & Thompson Wholesale Florists, have announced the engagement of their daughter, Donna Mae, to Ival Larry Kirk, son of Mr. and Mrs. Harold F. Kirk, Portland. Both young people plan to finish their college education before setting the wedding date. Mr. Cole is secretary-treasurer of the Rose City chapter of the Oregon Association of Nurserymen.

Paul Van Allen, Portland Wholesale Nursery Co., Portland, president of chapter 12 of the American Association of Nurserymen, has called an informal meeting of the chapter the evening of September 20 at the Portland Wholesale Nursery Co. Purpose of the meeting will be to talk with Dr. Richard White, executive vice-president, A. A. N., who will be in the city at that time.

Mr. and Mrs. Dan Schmidt, Schmidt Bros. Nursery, Troutdale, had to hurry home from the W. S. N. A. convention when they received word that a motor in their irrigating equipment had burned out.

The long, hot, dry summer that has prevailed in the Pacific northwest

MAHONIA AQUIFOLIUM

(Oregon-Washington Holly-Grape)

A very beautiful evergreen shrub with large glossy leaves and yellow flowers conspicuously appearing in the spring and followed by dark blue berries; a most satisfactory broad-leaved evergreen for any place in the United States.

1-yr., S., field-grown, row-run,
\$40.00 per 1000, \$5.00 per 100

SEEDLINGS are muddled, then packed in moist shingle tow and wrapped 100 to the bundle in waterproof paper. They are then packed 1000 seedlings to the crate, weighing approximately 55 lbs.

TERMS—Check is requested before shipment or will ship C.O.D. if preferred. All orders shipped by railway express unless otherwise stated.

Place your order now for fall, 1958, or spring, 1959, delivery.

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MOUNT VERNON NURSERY**

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(All orders shipped same day
they are dug.)



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EVERGREENS - Propagators & Growers
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CORBETT, ORE.

ROSES OLD and NEW

Fine-quality, two-year plants
budded on Multiflora in over
250 varieties.



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GRESHAM, ORE.

RHODODENDRON AND EVERGREEN LINERS

In Season

J. B. WHALLEY

Rt. 2, Box 683

TROUTDALE, ORE.

(the worst on record) has made it necessary for nearly all nurserymen to irrigate this summer. Some have adopted irrigation for the first time. Many nurseries not now equipped for irrigating will have such equipment installed before another season.

C. H. P.

POT FIRM SOLD

Mr. and Mrs. C. E. Berger, Canby, recently purchased the property of the Pacific Stoneware Co., 9217 North Peninsular avenue, Portland, and are now operating the Pacific Clay Products Co. at the same address. The Pacific Stoneware Co. first started doing business at Portland 83 years ago.

Mr. Berger, a retired employee of the Union Pacific railroad, and Mrs. Berger, who formerly taught in a business college, have rehired all the former employees of the Pacific Stoneware Co., including H. M. "Herb" Feddersen, who was with the old firm since 1900. Mr. Feddersen is now production manager for Pacific Clay Products Co. The new firm is producing a full line of florists' and nurserymen's clay pots. C. H. P.

GRAPE-BREEDING BREAK

Some long-sterile grape hybrids have been made fertile by a United States Department of Agriculture scientist who used a drug that doubled the chromosomes—inheritor bodies in the cell nucleus. Grape breeders have sought this breakthrough for half a century or more.

Southern muscadine grapes, *Vitis rotundifolia*, are vigorous, flavorful and resistant or quite tolerant to most serious grape troubles, such as black rot, mildew, anthracnose, virus diseases, berry moth, phylloxera, leaf hopper, and nematodes. But muscadines need the big cluster of bunch grapes. In turn, bunch grapes, such species as *V. vinifera* and *V. labrusca*, need the muscadine's strong qualities.

Now the way is open to try crosses of these two grapes to bring their good qualities together. This has been difficult, probably because of the difference in chromosome numbers: Cells of bunch grapes contain 38 chromosomes (two sets of 19) whereas muscadines have 40 (two sets of 20). The few hybrids over the years have been nearly sterile.

That was true of hybrids N. C. 6-15 and N. C. 6-16, produced at the North Carolina agricultural experiment station in 1917. They contained 39 chromosomes (19 plus 20).

[Continued on page 92]

PACIFIC COAST NURSERY

Rt. 1, Box 114B, Portland 10, Ore.

Pioneering Seedling Growers on
the Pacific Coast Since 1914

**Specializing in Fruit Tree Seedlings
also Shade and Flowering Trees**

Domestic Apple Seedlings,
Str. and Br.

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Cuttings

Combination carloads to eastern distributing points.

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Props.

QUALITY LINERS

Write for our catalog listing
over 450 varieties.

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OREGON HOLLIES

Skimmia japonica
General Nursery Stock
May we quote you?

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Wholesale Grower
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Hardy and Semihardy
Rhododendron Liners and
Larger Sizes.

All cutting-grown.
Ask for our list.

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CUTTING-GROWN RHODODENDRON LINERS

Hardy and semihardy varieties.
Quality offly

VAN VEEN NURSERY
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PORTLAND 6, ORE.

DWARF FRUIT TREE UNDERSTOCK

Apple Stocks

Malling, E.M., II, VII, IX
Clark Dwarf

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UNDERSTOCK NURSERY

Box 389 Medford, Ore.

Maurice C. Ravensberg

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Reliable exporters for general nursery
stock since 1922.

Catalog on application

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WHOLESALE
GENERAL NURSERY STOCK

CLASSIFIED ADS

Rate: 40 cents per line, each insertion.

Minimum order, \$4.00.

Instructions for the October 1 issue must be received by Friday, September 12.

Forms for October 15 issue will close Friday, September 26.

AZALEAS

AZALEAS	Per 100 (EACH)	Per 1000 (EACH)
Fedora, 3-yr., TT	\$1.00	....
Hino-Crimson (fiery red), 3-yr., TT, from beds	1.00	....
Kaempferi (seedlings), 4-yr., TT	.75	....
*Mollis (orange-red), (very hardy strain), 4-yr., T, from beds	.50	\$0.45
*Mollis (yellow) (very hardy strain), 4-yr., T, from beds	.50	.45
Sherwood Red, 3-yr., T, from beds	1.00	.90
*ITEMS SUITABLE FOR MAIL ORDER TRADE AND CANNING.		

C. HOOGENDOORN, NURSERYMAN

413 Turner Rd., Newport, R. I.

MAIL YOUR ORDER NOW FOR

rooted cuttings of Kurume and Pericats,

\$7.50 per 100, \$60.00 per 1000.

September and October delivery.

Budded hardy kurumes, Pericats and

indica, for forcing or outdoor planting.

Lining-out stock of flex bullata, Taxus,

capitata, cuspidata and hicksi.

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AZALEA LINERS

NOW BOOKING ORDERS.

SPRING, 1959.

POT-GROWN

OR

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AZALEA WILHELMINA

15 to 18 ins. B&B \$1.35 each

18 to 24 ins. B&B 1.75 each

24 to 30 ins. B&B 2.50 each

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Route 30, Lancaster Ave. Devon, Pa.

AZALEA HINODEGIRI

Each 10 rate 100 rate

12 to 15 ins. B&B \$2.00 \$1.75

15 to 18 ins. B&B 3.00 2.50

18 to 21 ins. B&B 4.00 3.50

21 to 24 ins. B&B 5.00 4.50

24 to 28 ins. B&B 6.00 5.50

28 to 32 ins. B&B 7.00 6.50

SPRINGFIELD NURSERY

492 Mountain Ave. Springfield, N. J.

HINO-CRIMSON, GLENN DALES, ETC.

Thousands of beautiful specimen kurume

and other evergreen Azaleas. Dense, bushy,

well-budded for forcing and landscape plant-

ing. Order now to be sure of getting your

requirements. Prices reduced. Larger land-

scape sizes. Send for list.

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KURUME AZALEAS

6 to 8 ins. to 12 to 15 ins.

QUALITY STOCK FOR

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Write for price list.

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RASPBERRY PLANTS

Place your orders now for fall or next

spring deliveries.

The new Durham Everbearing and off

season red Raspberry, also Latham (mid-

season), Gatineau (very early) and Septem-

ber Everbearing.

Prices on Durham, up to 3/16-in., \$55.00

per 1000; 3/16 to 1/4-in., \$65.00 per 1000;

1/4-in. up, \$75.00 per 1000.

Earl-Red, Muskoka, Latham, Gatineau

and September Everbearing, up to 1/4-in.,

\$65.00 per 1000; 1/4-in. up, \$75.00 per 1000.

New Amber yellow Raspberry, very sweet;

medium size, \$70.00 per 1000; large, 1/4-in.

up, \$85.00 per 1000.

All above priced F.O.B. No charge for

packing. Write for free catalog.

Packout price on Strawberry and Rasp-

berry plants on request.

WALTER K. MORSS & SON

Bradford, Mass.

RASPBERRIES

SEPTEMBER, red everbearer	Per 100	Per 1000
Transplants, heavy	\$12.50	\$100.00
No. 1, 1/4-in. and up	10.00	90.00
3/16 to 1/4-in.	9.00	80.00
INDIAN SUMMER, No. 1	9.00	80.00
Cash. Packing free. F.O.B. Marshalltown,		
WHELOCK WILSON NURSERY		
Marshalltown, Ia.		

LATHAM RASPBERRY PLANTS

Fall delivery.
Write for price on the amount
you need.

SPRUCE VALLEY NURSERY
Spruce, Mich.

PIXWELL GOOSEBERRIES

25,000 2-yr. No. 1, mostly extra heavy,
5c to 15c per plant. If you take them all
and dig them yourself. Will let go for 20,000.
Will furnish tractor and operator free of
charge for digging.

SCHWAB FRUIT FARM & NURSERY
220 N. 5th St. Mankato, Minn.

BULBS AND TUBERS

DIRECT FROM GROWER

QUALITY GUARANTEED

You will be interested in our wholesale
price list for fall, 1958. It offers a choice
assortment of domestic-grown and imported
bulbs and perennials selected for a discrim-
inating trade. You will find the best in the
new introductions as well as all popular
kinds offered at reasonable rates.

Ask for your copy TODAY. You will be
glad you did.

A. M. GROOTENDORST
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PEONIES, LILIES, IRISES

and other plants.

ROBINSON GARDENS

Since 1915 Scotts, Mich.

BUXUS

Buxus suffruticosa, true dwarf Old Eng-
lish Boxwood. Very nice, heavily rooted
plants, \$8.00 per 100, \$75.00 per 1000. Cash
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Boxwood Nursery, Wise, N. C.

CHESTNUTS

SEED CHESTNUTS

Castanea mollissima, orders taken for fall,
1958 crop. 50c per lb. F.O.B. Trappe, Md.
Lower prices for large quantities.

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DOGWOOD

Cornus Florida	Per 100	Per 1000
30,000 1-yr., s 8 to 12 ins.	\$ 4.50	\$ 35.00
understock	5.00	45.00
20,000 2-yr., s 12 to 18 ins.	6.50	60.00
20,000 2-yr., s 18 to 24 ins.	9.00	85.00
20,000 2-yr., s 24 to 36 ins.	14.00	130.00
4 1/2 to 5 ft. B&B	275.00	....
5 to 6 ft. B&B	325.00
Cornus florida rubra
3 1/2 to 4 ft. B&B	250.00
4 1/2 to 5 ft. B&B	325.00

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EVERGREENS, Liners

BOXWOOD, CARR'S HARDY TYPE
2-yr. in bands, well-rooted, \$32.50 per 100

ETONYMUS SARCOXIE
Heavy plants, in bands, 30.00 per 100

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POT-GROWN STOCK

Stock from 2 1/4-in. pots	Each, 100	1000
Arborvitae, American, dark green,		
2-yr., 7 to 9 ins.	\$0.30	\$0.25
pyramidal, 2-yr., 7 to 9 ins.	.30	.25
Juniperus pfitzeriana, Armstrong's,		
2-yr.	.30	.25
Juniperus chinensis pfitzeriana,		
2-yr. pots, 6 to 9 ins.	.30	.25
Juniperus glauca hetzi, 2-yr.,		
7 to 9 ins.	.30	.25
Taxus hatfieldi, 2-yr., 5 to 6 ins.	.30	.25
Taxus intermedia, 2-yr., 5 to 6 ins.	.30	.25
Taxus columnaris, Adams', 2-yr., 5 to		
6 ins.	.30	.25
Taxus hicksii, 2-yr., 6 to 8 ins.	.30	.25
Taxus andersoni, 2-yr., 6 to 8 ins.	.30	.25
Taxus cuspidata, 2-yr., 6 to 8 ins.	.30	.25
Taxus media, 2-yr., 6 to 8 ins.	.30	.25
Euonymus alatus compactus, 2-yr.	.22	.20
Boxwood, Korean, 2-yr., 3 ins.	.22	.20
Buxus sempervirens, 2-yr., 4 ins.	.22	.20

HEAVY ROOTED CUTTINGS

From flats, growing outside in lath house.
Boxwood, Korean, hardy, 3 ins. \$0.09 \$0.08
Juniperus glauca hetzi, 6 ins. .12 .12
Arborvitae elegantissima .12 .12
Taxus hicksii, 5 to 6 ins. ready .12 .12
Taxus intermedia, 5 to 6 ins. ready .12 .12
Taxus cuspidata, 5 to 6 ins. ready .12 .12
Taxus andersoni, 5 to 6 ins. ready .12 .12
Taxus media, 5 to 6 ins. ready .12 .12
Taxus hatfieldi, 4 to 5 ins. .12 .12
Taxus brownii, 4 to 5 ins. .12 .12
Taxus capitata fastigiata, 4 ins. .12 .12
TERMS: Packing and boxing free. 3 per
cent discount for cash with order.

250 plants of each variety at 1000 rate.

MIAMI NURSERY CO.

Tipp City, O.

EVERGREEN LINERS

POTTED LINERS, 2 1/4-in. pots	Each, 100	1000
Pfitzer Juniper	\$0.25	\$0.20
Burk Juniper, 2-yr.	.25	.20
Woodward Globe Arborvitae	.21	.16
Pyramidal Arborvitae	.22	.17
Dark green American Arborvitae	.22	.17
Hetz glauca Juniper	.23	.18
POTTED LINERS, 2-in. pots		
Biota aurea nana, 2-yr.	.23	.18
Armstrong Pfitzer Juniper, 2-yr.	.23	.18
FIELD-GROWN LINERS, from		
pots and 2-yr. nursery row.		
Biota aurea nana	.45	.40
Pyramidal Arborvitae	.50	.45
Pfitzer Juniper	.45	.40
Armstrong Pfitzer Juniper	.55	.50
Woodward Globe Arborvitae	.45	.40
FIELD-GROWN LINERS, from pots		
and 1-yr. nursery row.		
Biota aurea nana	.35	.30
Pfitzer Juniper	.35	.30
Woodward Globe Arborvitae	.35	.30
Armstrong Pfitzer Juniper	.45	.40

ROOTED CUTTINGS, heavy rooted
cuttings in lath house,
ready now.

Pfitzer Juniper .12 .11
Pfitzer glauca Juniper .11 .10
Pyramidal Arborvitae .11 .10
Woodward Globe Arborvitae .10 .09
Dark green American Arb. .11 .10
Taxus brownii .10 .09

TERMS: Cash with order. Free packing.

300 plants of a variety at 1000 rate.

Write for special prices on large quantities.

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New Lebanon, O.

EVERGREEN SEEDLINGS

Per 100	Per 1000
Scotch Pine (non-yellowing),	
8 to 14 ins.	\$6.00 \$40.00
Scotch Pine (Riga), 8 to 16 ins.	5.00 35.00
Scotch Pine (Riga), 4 to 8 ins.	4.00 22.50
Scotch Pine (Riga, Austrian	
Hills, N. German Low Plains.	
France-Highland Forests, N.	
Central Spain, 2 to 4 ins.	12.50
Austrian Pine, 4 to 8 ins.	4.00
Austrian Pine, 2 to 4 ins.	12.50
Red Pine, 4 to 8 ins.	4.00
White Pine, 4 to 6 ins.	4.50
Jap. Black Pine, 6 to 10 ins.	6.00
White Spruce, 3 to 6 ins.	4.50
Norway Spruce, 5 to 10 ins.	6.00
TERMS: 2 per cent for cash with order or	
25 per cent down, balance C.O.D.	

DUNEGAN NURSERY

Clymer, Pa.

EVERGREEN SEEDLINGS		
CONCOLOR FIR	Per 100	Per 1000
4 to 6 ins.	\$ 7.00	\$ 60.00
6 to 8 ins.	9.00	80.00
DOUGLAS FIR		
6 to 8 ins.	6.50	60.00
8 to 12 ins.	8.00	75.00
AUSTRIAN PINE		
6 to 9 ins.	5.50	50.00
PONDEROSA PINE		
9 to 12 ins.	6.00	55.00
BLACK HILLS SPRUCE		
4 to 6 ins.	4.50	40.00
6 to 8 ins.	6.00	50.00
COLORADO SPRUCE		
4 to 6 ins.	4.50	40.00
6 to 9 ins.	7.00	60.00
9 to 12 ins.	9.50	85.00

EVERGREENS, 2 1/2-IN. POT PLANTS		
ARBORVITAE		
American, dark green	20.00	180.00
Globe Woodward	20.00	180.00
Pyramidal	20.00	180.00
Siberian	22.00	200.00

JUNIPERS		
Andorra	20.00	180.00
Hetz (glauca)	22.00	200.00
Pfitzer	22.00	200.00
Savin	20.00	180.00
Von Ehrh	20.00	180.00
JUNIPERUS VIRGINIANA		
Special grafting grade	75.00	

THE LAKE CITY NURSERIES, INC.
Lake City, Minn.
Phone 4432

FIELD-GROWN LINERS		
	Each	100 1000
Greek Juniper, 8 to 12 ins.	\$0.15	\$0.13
Greek Juniper, 6 to 8 ins.	.12	.10
Hetz Juniper, 8 to 12 ins.	.17	.15
Hetz Juniper, 6 to 8 ins.	.14	.12
Savin Juniper, 8 to 12 ins.	.12	.10
Savin Juniper, 6 to 8 ins.	.08	.07
Pfitzer Juniper, 8 to 12 ins.	.17	.15
Pfitzer Juniper, 4 to 8 ins.	.14	.12
Polish Juniper, 12 to 15 ins.	.12	.10
Ashford Juniper, 8 to 12 ins.	.12	.10

POTTED PLANTS (2 1/2-IN.)		
Andorra Juniper	.17	.15
Sargent Barbary	.20	.18
Burford Holly	.15	.13
Mahonia Holly	.17	.15
Yaupon Holly	.17	.15
Magnolia	.16	.15
Burk Juniper	.35	.33
Pyracantha (red berry)	.16	.15
Packing and boxing free, 2 per cent discount for cash with order, 250 plants of each variety at 1000 rate.		

GRANT'S NURSERY
Route 2 Caledonia, Miss.

EVERGREENS		
	100	1000
Scotch Pine, 2-yr., 2 to 4 ins.	\$ 10.00	
Scotch Pine, 2-yr., 4 to 8 ins.	3.50	20.00
Scotch Pine, 3-yr., 6 to 12 ins.	6.00	28.00
4-yr. trans., 2-10 to 15 ins.	12.00	65.00
5-yr. trans., 2-12 to 20 ins.	15.00	90.00
Austrian Pine, 2-yr., 3 to 6 ins.	3.50	20.00
Austrian Pine, 3-yr., 6 to 12 ins.	5.00	28.00
American Red Pine		
2-yr., 5 to 10 ins.	5.00	25.00
Mugho Pine, 3-yr., 3 to 6 ins.	5.00	25.00
Norway Spruce, 2-yr., 4 to 8 ins.	5.00	25.00
4-yr. trans., 3-1, 8 to 12 ins.	14.00	75.00
Colorado Blue Spruce		
2-yr., 3 to 6 ins.	5.00	25.00
4-yr. trans., 2-2, 6 to 10 ins.	20.00	90.00
5-yr. trans., 3-2, 8 to 14 ins.	30.00	125.00
Black Hills Spruce		
3-yr., 4 to 8 ins.	6.00	30.00
Douglas Fir, 3-yr., 3 to 6 ins.	5.00	30.00
Concolor Fir, 3-yr., 4 to 9 ins.	6.00	35.00
American Arborvitae		
3-yr., 3 to 6 ins.	5.00	25.00
2-yr., 5 to 9 ins.	6.00	35.00

Write for complete price list and planting information.

CHAPMAN'S NURSERY
553 Church St. Indiana, Pa.

EVERGREEN LINERS		
	Per 100	Per 1000
Junipers, Andorra, 2 1/2-in.	\$22.00	
Pfitzer, 2 1/2-in. extra heavy	22.00	
Hetz, 2 1/2-in. extra heavy	22.00	
Blue Pfitzer, 2 1/2-in.	22.00	
Compact Pfitzer, 2 1/2-in.	22.00	
Irish, 2 1/2-in.	22.00	
Yew, Hicks, 2 1/2-in.	22.00	
Browns, 2 1/2-in.	22.00	
Halloran, 2 1/2-in.	22.00	
Thayer, 2 1/2-in.	22.00	
Samples sent on request.		

DIEHL'S FLOWER SHOP & NURSERY
R. 1, Box 150 Columbia, Ill.

DOUGLAS FIR
2-yr., field-grown, average 6 to 8 ins., graded.
Root pruned. Very carefully packed.
\$25.00 per 1000, F.O.B. Sheridan.
\$100.00 per 5000, F.O.B. Sheridan.
Order now. Spring, 1959 delivery.
5 per cent discount all cash orders.
FULTON V. SMITH, SHERIDAN, ORE.

3-YR. FIELD-GROWN LINERS		
	Per 100	Per 1000
Ilex convexa, XX, 8 to 12 ins.	\$30.00	
Ilex rotundifolia, XX, 12 to 15 ins.	35.00	
Juniper, Andorra, XX, 9 to 12 ins.	32.50	
Juniperus hetzi, XX, 9 to 12 ins.	35.00	
Juniperus hetzi, XX, 12 to 15 ins.	42.50	
Juniperus pfitzeriana, XX, 9 to 12 ins.	35.00	
Juniperus pfitzeriana, XX, 12 to 15 ins.	42.50	
Jun. pfitz. compacta, XX, 12 to 15 ins.	42.50	
Jun. pfitz. golden, XX, 12 to 15 ins.	42.50	
Taxus cuspidata, XX, 9 to 12 ins.	40.00	
Taxus hicksii, XX, 8 to 12 ins.	40.00	
Thuja elegantissima, XX, 9 to 12 ins.	35.00	
Thuja spiralis, XX, 9 to 12 ins.	35.00	
Thuja woodwardii, XX, 10 to 15 ins.	35.00	
Terms: Cash with order, packing free.		

DAMASCUS NURSERIES
Damascus, O.

CANADA HEMLOCK		
Collected seedlings	Per 100	Per 1000
6 to 9-in. seedlings	\$ 5.00	\$ 30.00
9 to 12-in. seedlings	8.00	70.00
12 to 18-in. seedlings	15.00	120.00
18 to 24-in. seedlings	30.00	

These are first-quality, collected Hemlocks, carefully dug and packed in sphagnum moss in ventilated boxes.
Send for complete list of hardy native Ferns, wild flowers, trees, shrubs and Evergreens.

ISAAC LANGLEY WILLIAMS
Box AN Exeter, N. H.

JUNIPERS		
Juniperus sabina tamariscifolia	\$0.16	
Juniperus hetzi glauca	.13	
Juniperus pfitzeriana, blue	.14	
Juniperus pfitzeriana	.13	
Juniperus armstrongii	.14	
Juniperus prostrata	.14	

Well established in 2 1/2-in. pots. 10 per cent discount on orders of \$200.00. Packed and shipped in lightweight plastic pots. Packing free. Terms: Cash with order.

MULHOLLAND NURSERY
2009 Lincoln Ave. Montebello, Calif.

PINE, SPRUCE SEEDLINGS		
AND LINERS	100	1000
Scotch Pine, 3-yr., 8 to 14 ins.	\$ 6.00	\$35.00
Color. Blue Spruce, 4-yr.		
6 to 12 ins.	8.00	55.00
Norway Spruce, 3-yr., 6 to 12 ins.	6.00	40.00
Juniperus glauca hetzi, 2-yr.		
6 to 12 ins.	25.00	
Spreading Jap. Yew, 3-yr.		
4 to 8 ins.	30.00	

Write for complete list.

PAINT CREEK NURSERIES
R. D. 1 Shippensburg, Pa.

EVERGREENS CUTTINGS AND LINERS		
Special cleanup prices while they last. Exceptionally well-rooted Taxus cuspidata.		
Juniperus hetzi glauca and Irish Juniper	\$4.50 per 100, \$60.00 per 1000.	
3-yr., field-grown Taxus cuspidata and Irish Juniper	\$25.00 per 100, \$200.00 per 1000.	
Packing free. Cash with order, please.		
NEIDEL'S NURSERY & GREENHOUSE		
Mtd. Route 4	Oil City, Pa.	
Scotch Pine seedlings		
Best for Christmas tree planting	100 1000	
2-yr., 4 to 8 ins.	\$3.00	\$20.00
2-yr., 2 to 4 ins.	1.50	8.00
3-yr., 6 to 12 ins.	4.00	28.00
Blue Spruce seedlings		
4-yr., 4 to 8 ins.	5.00	40.00
3-yr., 2 trans., 6 to 12 ins.	8.00	65.00
Terms: 10 per cent down, balance C.O.D.		
Vernon Dale Nursery, R. 4, Meadville, Pa.		

CANADA HEMLOCK		
Carefully collected.		
8 to 12 ins.	\$65.00 per 1000	
8 to 18 ins.	70.00 per 1000	

SUNBURY AIRPORT NURSERY
P. O. Box 416 Sunbury, Pa.
Phone AT 6-2671

DAPHNE ODORA
Rooted cuttings, \$100.00 per 1000.
Ready November 1.
Cash with order.

THUNDER MOUNTAIN ENTERPRISES
315 N. E. 148th Ave. Portland 30, Ore.

SURPLUS, PYRACANTHA C. LALANDI
In large pots, 18 to 24 ins., many with berries, \$1.00 each.
HETZ JUNIPER
15 to 18 ins., \$1.50; 18 to 24 ins., \$1.75.
No shipping.
HOHN NURSERY
Route 2 Jeanette, Pa.
2 miles north of Greensburg, on Route 66
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Surplus Stock
can be easily and quickly turned into
Cash
by listing it in the
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NANDINA SEEDLINGS		
1-yr., 4 to 6 ins.	\$5.00 per 100, \$45.00 per 1000.	
2-yr., 12 to 15 ins.	\$10.00 per 100, \$90.00 per 1000.	
3-yr., 2 to 3 ft.	\$15.00 per 100, \$125.00 per 1000.	

PINKSTON NURSERIES, PARROTT, GA.

EVERGREENS, B&B		
SHEARED SPECIMENS, CAREFULLY GRADED		
Berberis julianae, Belkville selection; compact, more handsome than old julianae, B&B.		
2000 12 ins., medium weight	\$1.25	
450 18 ins., heavy	2.00	
300 21 ins., heavy	2.25	
500 24 ins., heavy	2.50	
400 28 ins., heavy	3.00	
Pinus strobus, heavy sheared specimens.		

B&B		
250 5 ft.	\$5.00	
300 6 ft.	6.50	
65 7 ft.	7.50	
Thuja canadensis, heavy, full graded specimens.		
6000 2 ft.	\$2.70	
2400 2 1/2 ft.	3.15	
1200 3 ft.	3.60	
200 3 1/2 ft.	4.20	
4 ft. (10 per cent of total Hemlock order)		
3 per cent discount on 200 to one truck.	4.80	
5 per cent discount on 400 to one truck.		

Ilex, conifers, shade and flowering tree specimens in variety. Write for complete list.
HAYNESFIELD NURSERIES
Bristol, Tenn.

PFITZER JUNIPER		
Transplanted, extra nice, sheared.		
	Per 30-100	Per 1000
12 to 15 ins.	\$1.85	\$1.60
15 to 18 ins.	2.50	2.00
18 to 24 ins.	2.75	2.50
24 to 30 ins.	3.75	3.50

NORWAY SPRUCE		
18 to 24 ins.	\$2.00	\$1.75
2 to 2 1/2 ft.	2.25	2.00
2 1/2 to 3 ft.	3.00	2.75
3 to 4 ft.	5.00	

SCOTCH PINE		
18 to 24 ins.	\$2.00	\$1.75
2 to 3 ft.	2.75	2.50
3 to 3 1/2 ft.	3.75	3.50
3 1/2 to 4 ft.	4.75	

Please send for wholesale list.
H. BRUMOND SMITH NURSERY
R. R. 2, Box 198 Muncie, Ind.
Phone AT 2-5144

EVERGREENS		
100 Arborvitae, American, 3 to 4 ft.	\$ 3.00	
100 Arborvitae, Globe, 12 ins.	1.65	
450 Arborvitae, nigra, 2 ft.	2.00	
100 Juniper, Dwarf, Irish, 18 to 24 ins.	2.00	
50 Pfitzer Juniper, upright trained, 2 1/2 to 3 ft.	4.25	
250 Pine, Austrian, 18 to 24 ins.	1.90	
40 Pine, Austrian, 5 to 6 ft.	10.50	
300 Pine, Scotch, 2 to 3 ft.	2.50	
450 Pine, White, 18 to 24 ins.	2.00	
300 Pine, White, 24 to 30 ins.	2.50	
500 Spruce, Norway, 18 to 24 ins.	1.75	

Write for complete list.
THE HOME NURSERY
Corliss Ingels
140 miles southwest of Chicago
at Junction of Rt. 17 and 78 in Stark County
Since 1887
LaFayette, Ill.

FINISHED LANDSCAPE MATERIAL
Fall, 1958—Spring, 1959.

1000 Colorado Spruce, heavy, 4 and 5 ft., \$1.50 per ft., in 100 lots.
1500 White and Norway Spruce, 4, 5 and 6 ft., \$1.00 per ft., in 100 lots.
These prices for trees in ground. Transplanted, pruned. State inspected.

SPRUCE ACRES
A. V. Osterling & Son
1286 East Main Rd., Newport, R. I.
Phone Newport, Dial VI 6-3183.

EVERGREENS, ETC. B&B		
2100 Andorra Juniper, 18 to 24 ins.	\$2.00	
300 Andorra Juniper, 24 to 30 ins.	2.50	
280 Andorra Juniper, 30 to 36 ins.	2.95	
3600 Hetz Juniper, 18 to 24 ins.	2.25	
2700 Hetz Juniper, 24 to 30 ins.	2.50	
4200 Ilex rotundifolia, 15 to 18 ins.	2.25	
2300 Ilex rotundifolia, 18 to 24 ins.	2.75	
2100 Pfitzer Juniper, 18 to 24 ins.	2.50	
1100 D. Mugho Pine, 15 to 18 ins.	2.20	
700 Dogwood, white-fl., 4 to 5 ft.	2.25	
900 Dogwood, white-fl., 5 to 6 ft.	2.95	
600 Dogwood, white-fl., 6 to 7 ft.	4.00	
400 Dogwood, white-fl., 7 to 8 ft.	6.00	
Can quote on larger grades. Looking for a deal? We also sell row-run and by the block. Above stock closely sheared. Fine balling soil. To avoid delay, give us advance notice of your arrival. Phone 395.		
WHERRY'S NURSERIES, St. Marys, W. Va.		

EVERGREENS, B&B—Continued

EVERGREENS, A-1 QUALITY

About 1000 finished Evergreens, mostly Yews. Grown with plenty of space. None overgrown. Buyer to dig. Have been in this trade 40 years. No giveaway price but good deal to sincere, responsible buyer. Also will sell land, nearly 10 acres, or land and stock. Good opportunity for younger man. South of Chicago.

FRED W. VAN OYEN
1314 Sherman St., S. E.
Grand Rapids 6, Mich.

EVERGREENS, B&B

Finished specimen stock.
Write for our latest list of
landscape material.

WARRINGTON & SON, INC.
Greenwood, Del.

TAXUS CUSPIDATA CAPITATA

(Grown from seed) Each 10 100
18 to 24 ins. \$4.00 \$3.75
24 to 30 ins. 5.00 4.75

JUNIPERUS GLAUCA HETZII

24 to 30 ins. 3.50 3.00
JUNIPERUS COMMUNIS HIBERNICA
24 to 30 ins. 1.75 1.50

KRAYNAK NURSERY

2429 E. State St. Sharon, Pa.

PFITZER AND HETZ JUNIPERS

5000 sheared and well-cultivated.
15 to 18 ins. \$1.00 each
18 to 24 ins. 1.25 each

BUNUS SEMPERVIRENS

6 to 8 ins. \$ 25.00 per 100
10 to 12 ins. 60.00 per 100
12 to 15 ins. 100.00 per 100

Special price on large quantities.

A. J. BUTTERFIELD, FARMINGTON, MO.

EVERGREENS, B&B

Several thousand choice B&B Evergreens for early fall. Including a large selection of varieties of Taxus, Juniper, Pines, Spruce and Arborvitae. See our stock or write for price list.

WESTMAN'S EVERGREEN NURSERIES

1/2 mile west on South St.
Woodstock, Ill.

WHITE SPRUCE TO B&B

Sheared yearly.
Finest conical, symmetrical specimens.
Beautiful 6-ft. northern-grown stock.
Dig them yourself.

FOREST VIEW EVERGREEN NURSERY

Germania, Pa.

FINISHED LANDSCAPE STOCK

Hemlocks, 18 ins. to 5 ft.
Black Hills Spruce, 18 ins. to 4 ft.
White Pine, 2 to 6 ft.
Balsam Fir, 3 to 5 ft.
Colorado Spruce and others.
Write for list.

Plan to visit us this summer.

SUNNYBROOK NURSERIES

R. D. 2 Callicoon, N. Y.

EVERGREENS, B&B

Each 25 100
Pfitzer Juniper, 18 to 24 ins. \$2.25 \$2.00
Pfitzer Juniper, 24 to 30 ins. 2.50 2.25
Hetz Juniper, 18 to 24 ins. 2.25 2.00
Pyramidal Arborvitae, 4 to 5 ft. 2.25 2.00
Globe Arborvitae, 18 to 24 ins. 2.25 2.00

KERN NURSERY

600 S. 25th St. New Castle, Ind.

EVERGREENS, B&B

Junipers, Pfitzer, Von Ehron, Andorra, Spiny Greek, Irish. Grafted stock, Canaert, Keteleer, Blue Haven and Path Finder.
Austrian Pine, 3 to 4 ft., sheared.
Quality stock. Pick up at farm only.
Located in Florissant, St. Louis County

NEWELL NURSERY

Harrison 7-2670

8101 Ellerton Ave. St. Louis 14, Mo.

EVERGREENS

Taxus cuspidata (spreaders)
Taxus cuspidata capitata
Taxus media browni
Taxus media hatfieldi
Taxus media hicksii
All specimens, 3 to 5 1/2 ft.
Cash and carry. Prices on request.

J. PATE NURSERIES

2209 Post Rd. Hillsgrove, R. I.

EVERGREENS, B&B

Biota aurea nana, 15 to 18 ins. \$1.00
Juniperus stricta, 15 to 18 ins. 1.00
Juniperus hetzi, 12 to 15 ins. 1.00
California Privet, 18 to 24 ins.04
Silver Maple, 8 to 10 ft. 1.25
Complete list on request.

OAKVIEW NURSERIES

CAnal 7-2450 Sewell, N. J.

SHEARED STOCK, GOOD BALL

Biota excelsa, 18 to 24 ins. \$1.00
Biota orientalis, 30 to 36 ins. 1.00
Juniperus glauca hetzi, 12 to 15 ins. 1.00
Retinospora squar. veitchii, 15 to 18 ins. 1.00
Taxus cuspidata, 18 to 24 ins. 2.50
Taxus hicksii, 18 to 24 ins. 2.50
Ligustrum lucidum, 18 to 24 ins. 1.00
Write for complete wholesale price list.

SO. JERSEY COLONIAL NURSERIES, INC.

Route 45, R. D. 1, Salem, N. J.

Phone Salem 2356

200 ANDORRA JUNIPER

36 ins. Priced right.
You dig them.

ARCH NURSERIES

266 Kenmore Elmhurst, Ill.

Phone TE 2-0243

EVERGREENS, Miscellaneous

COLORADO BLUE SPRUCE

Good color. 24 to 36 ins.
You dig them.

Special price for row-run.

Fall, 1958. Spring, 1959.

MEYERS GARDENS & NURSERY

Cresco, Ia.

Taxus, Ilex, broad-leaved Evergreens, etc., in variety. Write for our latest list of liners and finished stock.

Del-Mar-Va Nurseries, Box 3, Lincoln, Del.

FRUIT AND NUT TREES

24 VARIETIES

DWARF APPLE TREE ASSORTMENTS
Consists of about even parts of 1 and 2-yr. Malling VII and IX trees, large, healthy, different varieties. Prices are F.O.B. packing at cost. 10 for \$16.00; 20 for \$30.00; 30 for \$42.00.

BAUM'S NURSERY

213-02 75th Ave. Bayside 64, N. Y.

DWARF FRUIT TREE UNDERSTOCK

APPLE STOCKS

Malling, E. M. II, VII, IX

Clark Dwarf

Pear Stocks

Quince, E. M., A, B, C.

Wholesale only.

UNDERSTOCK NURSERY

Box 389 Medford, Ore.

GRAPEVINES

CONCORD, Niagara, 2 yrs. old, No. 1, extra heavy, 10c each; 3-yr. No. 2, 6c each.

MCKEE'S NURSERY

P. O. Box 749 Covington, La.

DWARF EAST MALLING ROOT STOCK

for Apple, Pear, Peach.

See our ad on page 57.

V. KRAUS NURSERIES

Carlisle, Ont., Canada

GERANIUMS

QUALITY GERANIUM CUTTINGS

Unrooted, \$3.75 per 100, \$35.00 per 1000; rooted, \$7.50 per 100, \$70.00 per 1000. Special varieties slightly higher. Catalog of over 150 leading varieties free.

C. SECRETIST, MUSCATINE, IA.

GROUND COVERS

HARDY MYRTLE

Fresh-dug, good, made-up, 10-lead plants. Prepaid, cash prices. When ordering, state a second choice.

Bonny Blue Blend (The Blues) .85.00 per 100
Double Red 6.00 per 100
White 6.00 per 100

English Ivy, assorted: Baltic and Thorndale (low supply), 100 divisions for \$7.50.
Tender Myrtle Blue, 95c per 100.
Bonny Blue Blend, 1000 for \$45.00.

Convallaria majalis, mixed, \$12.50 per 100.

GOLDEN ACRES NURSERY

Shippewana, Ind.

HARDY MYRTLE AND EUONYMUS

Myrtle, 1000, \$50.00; 2000 to 10,000, \$45.00 per 1000; over 10,000, \$40.00 per 1000.

Euonymus coloratus, erectus and minimus, 1, 2, 3 and 4-yr. plants. Also specimen Sugar Maples.

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& GREENHOUSE PRODUCTS

15910 Cleveland Rd. Granger, Ind.

Hardy Myrtle (Vincea minor), plants with 20 leads or more and good roots, \$5.00 per 100, \$45.00 per 1000. Pachysandra, sand-rooted cuttings, \$40.00 per 1000. English Ivy, sand-rooted cuttings, \$40.00 per 1000. Cash.

Samuel I. Minder, 305 Euclid Ave., Lancaster, Pa.

VINCA MINOR

\$15.00 per 100; 1000 or more, \$40.00 per 1000. Cash with order.

VERONA GARDENS, TED GREVERS

Route 5 Battle Creek, Mich.

PERIWINKLE

Hardy running Myrtle (Vincea minor), heavy 15 to 25-cane clumps, of better than ever quality, dug and shipped fresh, \$50.00 per 1000.

Honeyauckle (Hall's halliana), 2 to 3 branched, \$45.00 per 1000.

English Ivy (Hedera helix), 1-yr., rooted cuttings, \$50.00 per 1000.

Pachysandra, 1-yr., rooted cuttings, \$50.00 per 1000.

H. C. WAUGH

Box 41, Upper River Rd. Gallipolis, O.

PACHYSANDRAS

Strong plants, \$50.00 per 1000.
2 per cent discount, cash with order.

H. C. WAUGH

Box 41 Gallipolis, O.

HARDWOOD CUTTINGS

HARDWOOD CUTTINGS

Unrooted. Hand-trimmed from good stock.
Taxus cuspidata Taxus hatfieldi
Taxus hicksii Taxus brownii
Taxus cuspidata nana, pyramidalis hillii.
Taxus intermedia.

\$20.00 per 1000. F.O.B. Cash in advance. Shipped November 15 to January 15. No packing charge.

JOSEPH HOLLER FLORIST & NURSERY

Paris, Ill.

9,500 Active Nurserymen

are in need of stock.
List your offerings in the
American Nurseryman Classified Section.

HARDY PLANTS

HARDY FIELD-GROWN PERENNIALS
Aquilegia, separate colors; Arabis, Aubrietia, Campanula, Carnations, Chives, Delphinium Pacific Hybrid, 10 separate colors; Dianthus, Dicentra, Doronicum, Gaillardia, Geum, Helleborus niger, Iberis sempervirens, English Lavender, Lythrum, Russell Lupines, Myosotis Oriental Poppies, Phlox sub., 15 varieties; Primroses, Pyrethrum (Daisies), Shasta Daisy Esther Read, Sedum, 10 varieties Sweet Williams, Thymes, Tritomas, Trollius, Violas, Violets.

If you have not received our list, send for it now. 100 more good varieties.

All plants fresh dug for each order.
Shipping season begins September 15.

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Penfield, N. Y.

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HEMEROCALLIS

HEMEROCALLIS, GOOD DIVISIONS
 Priced each in lots of 100.
 Betty Ann, richly colored \$0.15
 Florham, deep yellow15
 Honey Redhead, bright orange20
 Mrs. Hugh Johnson, fine red20
 Purple Waters, wine-red20
 Rajah, bright eye zone15
 Teyas lively bright red20
 Thunbergi, lemon, open evenings15
 Immediate shipment, 25 at 100 rate,
 SHEYENNE GARDENS, West Fargo, N. D.

HOLLY

ILEX OPACA
 CUTTING WOOD
 20 named varieties. Very hardy.
 Also male and female, unnamed.
 WRITE FOR PRICES
 AND SHIPPING SCHEDULE.

BERRIED HOLLIES

HARDY NAMED OPACAS
 3-yr., 1-gal. nursery cans
 5 to 10, \$2.20; 11 to 50, \$2.00 each.
 5-yr., 2-gal. nursery cans
 5 to 10, \$3.25; 11 to 50, \$3.00 each.
 Nursery pickup. No shipping.
 NURSEY EWALT'S

HEMLOCK HOLLOW NURSERY

R. D. 2, Box 111, Wexford, Pa.
 17 miles north of Pittsburgh
 Phone WE9more 6-1009

ILEX OPACA
 SUPERIOR NAMED VARIETIES
 WHOLESALE SUPPLIERS
 OF LINING-OUT STOCK
 Write for our price list.
 HOLLY HAVEN, INC.

Box 75 New Lisbon, N. J.

ENGLISH HOLLY SPECIMENS
 Up to 7 ft., twice transplanted,
 \$25.00 to \$50.00 in the ground.
 Appointment preferred. Phone Juniper 4-5410
 We do not ship.

HOLLY-BY-GOLLY

Long Beach Rd., St. James, L. I., N. Y.

MAY WE QUOTE YOU ON OUR
 BETTER OREGON HOLLIES?

Skimmia Japonica, general nursery stock.
 ALFRED TEUFEL, WHOLESALE GROWER
 11414 N. W. Cornell Rd., Portland, Ore.

Ilex glabra, 2 yrs. old, heavy roots from
 beds, \$20.00 per 100, \$125.00 per 1000.
 Cedarhurst Nurseries, Inc., 3044 Pawtucket
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HONEYSUCKLES

HONEYSUCKLES
 Lonicera japonica halliana, extra-heavy
 No. 1, 3 and 4-yr., 18 to 24-in. field plants,
 3, 4 to 6 leads, \$40.00 per 1000; lighter grade,
 \$30.00 per 1000; sample 100, \$4.00. Experi-
 enced labor for grading and packing quan-
 tity orders. Immediate shipment. No order
 too large. Phone OR 2-4612.
 ROBINSON NURSERY CO., Greenville, Ga.

IRISES

IRISES
 5 of a variety at 10 rate.
 25 of a variety at 100 rate.

	Per 100	Per 1000
ALADDIN'S WISH, blue	\$1.50	\$12.00
BIRLING BLUE, blue	1.50	12.00
BLUE SHIMMER, blue on white	1.50	12.00
CHRISTABEL, copper-red	1.50	12.00
ELSA SASS, sulphur-yellow	1.50	12.00
FLORA ZENOR, pink	1.50	12.00
HARRIET THOREAU, orchid-pink	1.50	12.00
INDIAN HILLS, purple	1.50	12.00
JAKE, white	1.50	12.00
MAJENICA, salmon-pink	1.50	12.00
MELANIE, pink	1.50	12.00
MING YELLOW, yellow	1.50	12.00
MULBERRY ROSE, mulberry	1.50	12.00
NOONDAY SKY, sky-blue	1.50	12.00
RANGER, crimson-red	1.50	12.00
RED GLEAM, chestnut-red	1.50	12.00
RED MEADOW, red	1.50	12.00
ROYAL COACH, dark blue	1.50	12.00
SABLE, blue-black	1.50	12.00
TIFFANY, reddish crown	1.50	12.00
VIOLET CROWN, lilac	1.50	12.00
WABASH, white velvet	1.50	12.00
WINTER CARNIVAL, white	1.50	12.00

PARKER'S PEONY FARM AND NURSERY
 Fayetteville, N. Y.

IVIES

BALTIC IVY
 Hardest ivy. Fine for wall or ground
 cover. True stock. Well-rooted plants.

Rooted cuttings Per 100 Per 1000
 2-in. pots \$ 7.00 \$ 65.00
 2-in. pots 12.50 115.00

NEW THORNDAL IVY

2 1/2-in. pots \$25.00 per 100
 Euonymus kawensis, 2-in. pots, 20.00 per 100

EUONYMUS VEGETUS

2-in. pots, \$12.00 per 100, \$110.00 per 1000.
 2-yr., field-grown, \$35.00 per 100.

STRATFORD GARDENS

Russell Breece, M. R. 9 Delaware, O.

ENGLISH IVY (HEDERA HELIX)

Our super quality large-leaved strain.
 Approved landscape architects' standards.
 Order now! Ready for immediate shipment.
 Strong 5 to 7-in. cuttings from field plants,
 \$6.00 per 100, \$55.00 per 1000.
 BABCOCK GARDENS, R. 2, Jamestown, N. Y.

LAWN GRASS AND SEED

ZOYSIA LAWN GRASS SOD

New low wholesale prices on Zoysia lawn
 grass sod. Meyer Z-52, 75¢ per sq. yd.; Em-
 erald, \$1.25 per yd. F.O.B. in truckload lots.
 Bare-root turf, shipped at \$1.50 and \$2.00
 per yd. Zoysia makes a dense, wear-resistant
 turf that chokes out weeds and crab grass.
 Zoysia Matrella, hybrid Bermudas and Cen-
 tidpe also at low prices. Write for complete
 information.

BECK'S ZOYSIA CO.

506 N. College St., Auburn, Ala.

"PURE KY." BLUE GRASS LAWN SEED

We have a beautiful crop of bright, clean
 seed this year and you will be delighted with
 the price, quality and results. Order a
 good supply now.

100 lbs., \$37.50; 50 lbs., \$19.50; 10 lbs.,
 \$5.00. All F.O.B. here, subject to price
 change and unsold.

WALNUT LAWN FARM

Route 2 Lexington, Ky.

LILACS

LILACS 10 to 100
 LINERS, COMMON \$0.08
 WHITE10
 BUSHES
 2 to 3 ft., COMMON30
 CONGO, single red, 3 to 4 ft. 1.10
 LEON MATHEAU, single red, 3 to 4 ft. 1.10
 MME. CATHERINE BRUCHET,
 double white, 3 to 4 ft. 1.10
 PARKER'S PEONY FARM AND NURSERY
 Fayetteville, N. Y.

LINING-OUT STOCK

QUALITY LINERS
 Propagated from strong, healthy, true-to-
 name stock.

	Each, 100 rate	1000 rate
Buxus koreana, 2-yr. pot	\$.35	\$0.30
Euonymus alatus, 1-yr., tr.	.20	.18
compactus, 2-yr., tr., 6 to 10	.28	.25
2-yr. pot	.28	.25
2-yr., tr., 10 to 12 ins.	.45	.35
Euonymus r. erectus, 2-yr., tr.,		
6 to 8 ins., bushy	.20	.18
2-yr., tr., 8 to 12 ins.	.25	.22
Juniperus hor. plumosa, 2-yr.		
pot	.30	.28
Malus Dorothea, pink; 1-yr. gft.	.35	.32
Picea moerheimi, 1-yr. from gft.		
spr. only	1.75	1.65
Rhus aromatica, 2-yr., tr., 4 to		
8 ins.	.18	.15
2-yr., tr., 6 to 8 ins.	.25	.22
Symphoricarpos hancecki,		
2-yr., tr., 6 to 12 ins.	.30	.25
Tamarix Summer Glow,		
1-yr., hwc	.18	.16
Taxus cuspidata, 2-yr. pot	.30	.28
cupidata, 2-yr. from pl. bd.	.40	.35
capitata, 4-yr. tr. bed	.58	.53
capitata, 4-yr. tr. fld.	.85	.75
c. nigra, NEW, 2-yr. pot	.35	.32
c. nigra, NEW, 3-yr., tr.	.70	.65
c. thuyerae, 2-yr. pot	.30	.28
densiformis, 2-yr. tr. heavy	.45	.42
intermedia (Sebian), 2-yr. pot	.30	.28
andersoni, 2-yr. pot	.30	.28
andersoni, 3-yr., from pl. bd.	.40	.35
browni, 2-yr. pot	.30	.28
halfieldi, 2-yr. pot	.30	.28
hickii, 2-yr. pot	.28	.25
hickii, 3-yr. from pl. bd.	.40	.35
repandens, 1-yr. from gft.	.95	.90
wardi, 2-yr. pot	.35	.32
Thuja hoveyi, 2-yr. pot	.25	.22 1/2
nigra, 2-yr. pot	.28	.25
woodwardi, 2-yr. pot	.28	.25
Viburnum carlesii, 2-yr., tr. gft.		
6 to 12 ins.	.60	.55
carlesii, 2-yr., tr. gft., 12 to 18	.70	.65
opul. nanum, 2-yr. pot	.30	.28

THE COTTAGE GARDENS

Nick I. W. Krick Harold E. Hicks
 35th Ave. S. E.
 Lansing 17, Mich.

SEEDLINGS, SURPLUS

Strong, healthy seedlings ready for trans-
 planting, 400 to 500 per flat. Special quot-
 ation on quantity. Pieris japonica, \$15.00 per
 flat. Azalea calendulacea, kaempferi
 and poukhanensis; Leucothoe catesbaei, \$11.00
 per flat. Hybrid Rhododendrons (hardy red
 parent), \$8.50 per half flat. Rhod. carolinian-
 um, \$7.50 per half flat. Shipped in flats
 in special cartons. Deliveries at cost.

JOHN VERMEULEN & SON, INC.

Neshanic Station, N. J.

FINER LINERS

To buy and grow only select quality plants
 of the better varieties is good sound busi-
 ness and profitable. Don't fail to check our
 new catalog of FINER LINERS, free copy
 on request.

JOHN VERMEULEN & SON, INC.

Neshanic Station, N. J.

LINING-OUT STOCK

Per 100 Per 1000
 (EACH) (EACH)

*Althaea coelestis (blue), 1-yr. grafts	\$.25	
*Althaea Lady Stanley (semi- double white, pink center), 1-yr. grafts	.25	
*Althaea Woodbridge (large single pink), 1-yr. grafts	.25	
Cotoneaster divaricata, 1-yr. seedlings	12 1/2	\$0.10
*Enkianthus campanulatus (cut- tings), strong 2-yr., T, 8 to 12 ins.	.40	.35
*Euonymus radicans erectus, strong 3-yr., T	.40	.35
*Euonymus vegetus, strong 2-yr., T, heavy	.30	.25
*Euonymus vegetus, strong 3-yr., T, heavy	.40	.35
*Fagus sylvatica riversi (River's Purple Beech), 2-yr. grafts, 12 to 18 ins.	1.75	1.50
*Forsythia Beatrice Farrand (NEW), 1-yr., T, softwood cuttings	.30	.25
*Forsythia Lynwood Gold, 1-yr., T, softwood cuttings	.18	.15
*Forsythia Spring Glory, 1-yr., T, softwood cuttings	.18	.15
*Hydrangea hortensis (hardy), deep pink, compact grower, 2-yr., T	.50	.45
Ilex compacta, 2-yr., T	.40	.35
Ilex glabra compacta, 2-yr., T	.40	.35
Ilex latifolia, 2-yr., T	.40	.35
Ilex rotundifolia, 2-yr., T	.40	.35
Juniper, Andorra, 2-yr., T	.40	.35
Juniperus hezli, 2-yr., T	.40	.35
Juniperus pfitzeriana glauca, 2-yr., T, from cuttings	.40	.35
*Leucothoe catesbaei, strong 3-yr., T	.40	.35
*Pieris japonica (Andromeda japonica), 3-yr., T, 9 to 12 ins.	.50	.45
Prunus maritima (Beach Plum), 1-yr., sdgs., 12 to 18 ins.	.15	.10
Prunus tomentosa (Nanking Cherry), strong 1-yr. seedlings	.10	.07 1/2
Rhododendron virginale sdgs., 3-yr., TT, 8 to 12	.75	
Taxus brevifolia (nana), 2-yr., T	.45	.40
Taxus cuspidata, spread- ing, 2-yr., T	.45	.40
Taxus intermedia, 2-yr., T	.45	.40
Thuja Woodwardi, 2-yr., T	.55	
Viburnum tomentosum (true), 1-yr., T, softwood cuttings, 8 to 12 ins.	.25	.20
Viburnum wrightii, 3-yr. grafts, 2 to 3 ft.	1.25	1.00
*Vitis macrophylla (true), 2-yr. bedded, 18 to 24 ins.	.40	.35
*Weigela vaniciei, 1-yr., T, softwood cuttings	.25	.20

ITEMS SUITABLE FOR MAIL ORDER

TRADE AND CANNING.

See other listings under Azaleas, Maples,
 Hellebores, Taxus and Viburnums.

C. HOOKENDOORN, NURSERYMAN
 413 Turner Rd., Newport, R. I.

LINING-OUT STOCK

We are now booking orders for fall and
 winter delivery of the following heavily
 rooted liners.

Buxus japonica	Ilex rotundifolia
Dwarf Euonymus	Viburnum
Gardenia fortunei	odoratissimum
Gardenia radicans	Ilex burfordii
Gardenia velutina	Ligustrum lucidum
Gardenia stricta nana	Ilex East Palatka

Prices of above lining-out stock:

	Per 100	Per 1000
3 to 5 ins., rooted cuttings	\$ 5.00	\$ 40.00
4 to 6 ins., transplants	6.00	50.00
6 to 8 ins., transplants	10.00	80.00
8 to 12 ins., transplants	12.50	100.00

Baker Arborvitae Photinia glabra
 Berckmans' Arborvitae Pittosporums
 Globe Arborvitae Buxus harlandi
 Chamaecyparis allumi Podocarpus
 Osmanthus fragrans Ilex bullata
 Pfitzer Juniper

Prices of above lining-out stock:

	Per 100	Per 1000
3 to 5 ins., rooted cuttings	\$ 6.00	\$ 50.00
4 to 6 ins., transplants	8.00	75.00
6 to 8 ins., transplants	12.50	100.00
8 to 12 ins., transplants	15.00	125.00

Book your orders early, for complete selection.

FLOWERWOOD NURSERY, INC.

P. O. Box 186 Cairo, Ga.

Phone 2-4021 or write.

EVERGREENS

Each

Blue Hets Juniper, outdoor, full sun; 6 to 8 ins., bare-
 root \$0.06

Burk Juniper, outdoor, shade house, 6 to 8 ins.,
 bare-root14

Pfitzer Juniper, outdoor, full sun, 6 to 8 ins., bare-
 root07

Spreading Japanese Yew,
 6 to 8 ins., hands20

McININCH GREENHOUSES
 St. Joseph, Mo.

LINING-OUT STOCK—Continued

LINING-OUT STOCK		
Bedded 1-yr. in the open.	100	1000
Ilex convexa	20.00	180.00
Ilex rotundifolia	20.00	180.00
Ilex hetzi	20.00	180.00
Juniperus pfitzeriana	20.00	180.00
Juniperus hetzi	20.00	180.00
Taxus andersoni	20.00	175.00
Taxus brevifolia	20.00	175.00
Taxus capitata, cutting-grown	25.00	225.00
Taxus capitata Adams		
cutting-grown	25.00	225.00
Taxus canadensis stricta	16.00	150.00
Taxus cuspidata	17.50	150.00
Taxus hatfieldi	17.50	150.00
Taxus hunnewelliana	17.50	150.00
Taxus hicksi	17.50	150.00
Taxus internata	17.50	150.00
Taxus henryi	20.00	175.00
Taxus densiformis	20.00	175.00
Taxus vermeulenii	17.50	150.00
Taxus wardii	17.50	150.00
Taxus Moon's columnaris	20.00	175.00
Taxus brownii	17.50	150.00

2-yr. bedded in the open.	100	1000
Ilex convexa, 6 to 9 ins.	25.00	200.00
Ilex rotundifolia, 6 to 9 ins.	25.00	200.00
Ilex hetzi, 6 to 9 ins.	25.00	200.00
Taxus Adams col., 12 to 15 ins.	50.00	450.00
Taxus Moon's col., 8 to 12 ins.	30.00	250.00
Taxus cuspidata, 6 to 9 ins.	30.00	250.00
Taxus hatfieldi, 6 to 9 ins.	30.00	250.00
Taxus cuspidata comp., 6 to 9 ins.	30.00	250.00
Taxus hunnewelliana, 6 to 9 ins.	30.00	250.00
Taxus browni, 6 to 9 ins.	30.00	250.00

TAXUS CAPITATA, SEEDLING-GROWN.		
1-yr. seedlings	100	1000
2-yr. seedlings	10.00	90.00
3-yr. seedlings	17.50	150.00
4-yr. seedlings, transplanted, 6 to 10 ins.	30.00	250.00

CORNUS FLORIDA (WHITE DOGWOOD)		
Seedlings	100	1000
1-yr., No. 1 grade	5.00	50.00
1-yr., No. 2 grade	5.00	40.00
1-yr., No. 3 grade	4.00	30.00
1-yr., No. 1 grade	12.50	100.00
2-yr., No. 2 grade	10.00	90.00

Special prices on large quantities.		
Full list on demand.		

VERKADE'S NURSERIES, WAYNE, N. J.		
WELL-ESTABLISHED POTTED LINERS		
READY FOR FALL PLANTING		
Per 100 Per 1000		

Andorra Juniper, 2 1/4-in.	20.00	175.00
Pfitzer Juniper, 2 1/4-in.	20.00	175.00
Pfitzer Juniper, 3-in.	25.00	225.00
Pfitzer Juniper, 4-in.	35.00	325.00
Cherry Laurel, 2 1/4-in.	20.00	175.00
Euonymus, patens		
compacta, 2 1/4-in.	15.00	135.00
Euonymus acutus, 2 1/4-in.	15.00	135.00
Euonymus radicans		
vine, 2 1/4-in.	15.00	135.00
Ilex burfordi, 2 1/4-in.	20.00	175.00
Ilex rotundifolia, 2 1/4-in.	20.00	175.00
Pyracantha, lalandi and yunnanensis, 2 1/4-in.	20.00	175.00
Bur Oak, 2-yr. seedlings		
12 to 18 ins.	12.00	100.00
18 to 24 ins.	15.00	125.00
2 to 3 ft.	20.00	175.00

Fall price list of H&B stock upon request.		
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TRITSCHLER'S GREENHOUSES		
4425 W. Lawn Dr.		
Nashville 9, Tenn.		

HEAVY LINERS FROM FIELD BEDS		
Per 100 Per 1000		

Taxus cuspidata, 10 to 15 ins., 4-yr.	45.00	
TTT		
10 to 12 ins., 3-yr., TT	40.00	
Taxus capitata, 10 to 12 ins., 3-yr., TT	50.00	
8 to 10 ins., 2-yr., T	40.00	
Taxus browni, 10 to 12 ins., 3-yr., TT	50.00	
Taxus hicksi, 8 to 12 ins., 3-yr., TT	45.00	
Taxus hatfieldi, 8 to 12 ins., 3-yr., TT	45.00	
3-yr., TT		
Euonymus vegetus, 10 to 15 ins., branched	35.00	
Ribes alpinum, 10 to 15 ins., branched	15.00	

STROHL'S NURSERY		
5204 St. Joe Rd.		
Fort Wayne, Ind.		

TAXUS		
Cuspidata, transplants, 6 to 8 ins.	20c	
Media browni, transplants, 6 to 8 ins.	25c	
Media hicksi, transplants, 6 to 8 ins.	25c	
8 to 10 ins.	35c	

All plants branched and very good root system. Send for list of unusual plants.		
Free packing.		

ALAN WILD NURSERY		
Neshaminy P. O., Bucks County, Pa.		

Heavily rooted cuttings from open sand-pat beds, ready for immediate shipment.		
Old English Boxwood, 2 to 3 ins., 4c; 5 to 6 ins., 8c. Ilex burfordi, rooted cuttings, 3c; Ilex rotundifolia, rooted cuttings, 3c. Euonymus patens, 2c. Ligustrum lucidum, 2c. English Ivy, 2c.		

E. F. Du Bose Nursery, Huntsville, Ala.		
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LINERS OF THE BETTER KINDS		
Write for price list.		

GULF STREAM NURSERY, INC.		
Wachapreague, Va.		

LINING-OUT STOCK

Per 100	Per 1000
Fagus sylvatica, 2-yr., T. FR. 6 to 9 ins.	\$15.00 \$140.00
Taxus cuspidata, upright	
2-yr. seedlings, 4 to 6 ins.	15.00 120.00
Viburnum carlesii (fragrant), 1-yr. seedlings	12.00 100.00
Viburnum dilatatum macrophyllum (Jap.), 1-yr. seedlings	8.50 75.00
Viburnum dilatatum pilosulum, 1-yr. seedlings	8.50 75.00
Viburnum dilatatum (Linden), 1-yr. seedlings	7.50 65.00

BOULEVARD NURSERIES		
Newport, R. I.		

LINING-OUT STOCK		
Fall 1958	Spring 1959	

400 Clethra alnifolia rosea, 6 to 9 ins.		
TT		
450 Ilex glabra, 6 to 9 ins., TT	35	
300 Ilex opaca, female; 6 to 9 ins., TT	45	
200 Ilex opaca, female; 9 to 12 ins., TT	55	
300 Pyracantha Kansan, 9 to 12 ins., TT	55	
300 Pyracantha lalandi, 6 to 9 ins., TT	40	
500 Pyracantha lalandi, 9 to 12 ins., TT	50	
100 Pyracantha Kansan, 12 to 15 ins.		

500 Pyracantha lalandi, 12 to 15 ins., 1-gal. cans	1.50	
1-gal. cans	1.25	

THE CAPE COD NURSERIES		
H. V. Lawrence, Inc.		
Falmouth, Mass.		

MAGNOLIAS

Magnolia grandiflora, 4 to 8 ins., shipped in pots, 2 1/2-in. or removed, \$15.00 per 100.		
1-yr. seedlings for spring 1959, about 4 ins. high, \$50.00 per 1000. Cash and no charge for packing.		

Harwell Nursery, Van Buren, Ark.

MAPLES

RED JAPANESE MAPLE		
Your inspection of the plants in foliage is cordially invited.		
Per 100 Per 1000		

*Acer palmatum atropurpureum, selected types, strong 2-yr. grafts, 12 to 18 ins.	\$1.50	\$12.50
*Acer palmatum atropurpureum, pureum, strong 3-yr. grafts, 12 to 18 ins.	1.75	
*Acer palmatum atropurpureum, OSSI BENI, 2-yr. grafts, 12 to 18 ins.	1.50	
*Acer palmatum atropurpureum, OSSI BENI, 3-yr. grafts	2.00	

*ITEMS SUITABLE FOR MAIL ORDER TRADE AND CANNING.		
C. HOOGENDOORN, NURSERYMAN		
413 Turner Rd.		
Newport, R. I.		

NORWAY MAPLE

Straight trunks. Fine heads. Very fibrous roots.		
10-49 50-250		
6 to 8 ft.	\$3.00	\$25.00
8 to 10 ft., 1 to 1 1/4-in.	4.40	35.00
9 to 11 ft., 1 1/4 to 1 1/2-in.	6.00	50.00
10 to 12 ft., 1 1/2 to 1 3/4-in.	8.80	70.00
11 to 13 ft., 1 3/4 to 2-in.	11.00	90.00

PRINCETON NURSERIES		
Princeton, N. J.		

Acer, saccharum and rubrum, root-pruned, field specimens, 2-in. to 12-in. caliper.		
R. H. Rogers Nursery, Cooperstown, N. Y.		

For \$4.00

you can offer that surplus in a classified ad of 10 lines on these pages—quickly and easily turning stock into cash.

At 40c PER LINE

you can keep a list of specialty items before trade buyers through the selling season at small cost.

Send your copy (count 6 average words to line) for the October 1 issue to reach us by September 12.

Forms for the October 15 issue will close September 26.

AMERICAN NURSERYMAN
343 S. Dearborn St. CHICAGO 4, ILL.

JAPANESE RED MAPLE SEEDLINGS

(ACER PALMATUM ATROPURPUREUM)		
Carefully selected, finest red Maple.		
Well-hardened from open field beds, liners and heavy potting grades in large quantities.		

Each 250 or per 100 more		
--------------------------	--	--

1-yr. (all red), 8 to 10 ins.	\$0.22	\$0.20
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2-yr., X, light branched		
8 to 10 ins.	.33	.30
10 to 12 ins.	.33	.35
12 to 15 ins.	.45	.42

2-yr., X, heavy grade, branched transplants		
6 to 8 ins.	\$0.43	\$0.40
8 to 10 ins.	.48	.45
10 to 12 ins.	.55	.50
12 to 15 ins.	.65	.60

3-yr., XX, branched transplants, ready for 6-in. pots (small)	\$0.80	\$0.75
12 to 15 ins.	.95	.90
15 to 18 ins.		

4 and 5-yr., well-branched, heavy grade		
10 to 12 ins.	\$1.00	\$0.95
12 to 15 ins.	1.25	1.18
15 to 18 ins.	1.50	1.50
18 to 21 ins.	2.00	1.90
21 to 24 ins.	2.75	2.60

Shipped dormant. Packed in sphagnum.		
Late fall or early spring.		
2 per cent deposit will reserve your order.		

HUBBS NURSERIES		
Route 130		
Specializing in Japanese Maple seedlings.		
Riverton, N. J.		

SILVER MAPLE

Nursery-grown, transplanted.		
Per 30-100 Per 1000		

1 to 1 1/4-in. cal.	\$1.75	\$1.50
1 1/4 to 1 1/2-in. cal.	2.25	1.90
1 1/2 to 2-in. cal.	2.75	2.50
2 to 2 1/2-in. cal.	3.50	

Wholesale list on request.		
R. BRUMOND SMITH NURSERY		
R. R. 2, Box 198		
Muncie, Ind.		
Phone AT 2-5144		

SILVER MAPLE, NURSERY-GROWN		
NORTHERN ILL.	Per 10 Per 100	

1 to 1 1/4-in.	\$1.75	\$1.25
1 1/4 to 1 1/2-in.	2.25	1.75
1 1/2 to 1 3/4-in.	2.75	2.25

Also available: Sycamore, Chinese Elm.		
Will deliver in 50-mile radius of Chicago.		
All other orders picked up at nursery.		

KINAST NURSERY, R. 173, Antioch, Ill.		
2 miles west Route 45. Phone 1040M.		

SILVER MAPLE

5 to 6 ft.	\$0.40	
6 to 8 ft.	.75	
8 to 10 ft.	.75	
10 to 12 ft.	1.25	

CRIMSON DALE NURSERY		
Winchester, Tenn.		

NORWAY MAPLES

Nursery-grown. Well headed.		
2 to 2 1/2-in. cal.	\$10.00	
2 1/2 to 3-in. cal.	12.00	
3 to 3 1/2-in. cal.	14.00	

FEENEY'S NURSERY		
Rustleton Pike		
Feasterville, Pa.		

COLLECTED ACER

RUBRUM AND SACCHARUM		
from whips to 4-in. caliper.		
CURTIS NURSERIES, INC.		
Callicoon, N. Y.		

PACHYSANDRAS

PACHYSANDRAS		
1-yr.-old, large frame plants.		
Satisfaction guaranteed.		
Large quantity.		

\$5.50 per 100, \$43.00 per 1000.		
\$40.00 per 5000.		

BRUNDAGE & GUTHRIE		
123 Franklin St.		
Tarrytown, N. Y.		

PACHYSANDRA TERMINALS		
Per 100 Per 1000		

1-yr. plants	\$5.00	\$42.50
2 1/4-in. pot-grown plants	10.50	95.00

HANSEN BROS. NURSERIES, INC.		
1268 Montgomery Ave.		
Narberth, Pa.		

Pachysandras, strong plants, grown in soil frames with light shade. First-class stock.		
\$6.00 per 100, \$50.00 per 1000; \$47.50 per 1000 for 5000 or more, including good packing.		
Peekskill Nursery, Shrub Oak, N. Y.		

PACHYSANDRAS		
Strong rooted cuttings, \$4.25 per 100, \$40.00 per 1000.		

DUNWOODIE NURSERIES		
6 Smart Ave.		
Yonkers, N. Y.		

s and up. \$75.00 per 100, \$700.00 per 1000;
 divisions, 3 to 5 eyes, \$40.00 per 100, \$350.00
 1000.
 ERKADE'S NURSERIES, WAYNE, N. J.

PEONIES

Strong 3 to 5-eye divisions from young plants. Deliveries being made now. Packing free for cash with order, otherwise at cost.

Canari, sulphur-white\$3.50 30
 Duc de Cazes, carmine-red, rose center 3.50 30
 Duchesse de Nemours, ivory-white 3.50 30
 Duchesse d'Orleans, soft pink 3.50 25
 Duke of Wellington, pure white 3.50 30
 Edulis Superba, excellent deep pink 3.50 25
 Felix Crousse, ruby-red 4.00 35
 Festiva Maxima, white, center flecked red 4.00 35
 Pontenelle, excellent medium dark red 4.00 35
 Fragrans, medium to dark rose-pink 3.50 30
 Francois Ortegat, crimson 4.00 30
 Karl Rosenfeld, velvety dark crimson 4.50 40
 La Perle, light old-rose pink 4.00 35
 Le Cygne, top rated pure white 15.00 100
 Lillian Wild, very large, flesh to white 4.50 40
 Mme. Ducl, bright silvery pink 4.00 35
 Mme. de Verneville, very fragrant white 4.00 35
 Marguerite Gerard, hydrangea-pink 4.00 35
 Masterpiece, large brilliant cerise 4.00 35
 Mons. Jules Elie, large pink 4.00 35
 Ozark Beauty, late radiant pink 4.00 35
 Queen Victoria, flesh-white, cream center 3.50 30
 Queen Emma, large satiny pink 3.50 30
 Red Rocket, bright deep red 4.50 40
 Sarah Bernhard, appleblossom-pink 6.00 40
 Umbellata rosea, violet rose-pink 4.00 35
 Venus, large hydrangea-pink 4.00 35
 Officialis rubra, early bright red 7.00 40
 Mixed Peonies, grown mixed 2.50 20
 Pink Peonies, to color, not named 3.00 25
 White Peonies, to color, not named 3.00 25
 Red Peonies, to color, not named 3.00 25
 Single Red Peony, single flowering 4.00 35
 Peony liners available. Write for quotations. Rate: 50¢ a variety at 10 rate; 25¢ of a variety at 100 rate.

Send for our complete list of Peonies, Irises and Hemerocallis.

SARCOXIE NURSERIES PEONY FIELDS
 Wild Bros. Nursery Co.
 Phone 43 Sarcoxie, Mo.

PEONIES

Healthy 3 to 5 divisions. Per 100

AURORA, white\$3.50 \$30.00
 DAUBENTON, light pink 4.00 35.00
 DUKE OF CLARENCE, rose 4.00 35.00
 GRANDIFLORA NIVEA PLENA, white 4.00 35.00
 AUGUSTE LEMONIER, bright white 4.00 35.00
 ETTA, pink 4.00 35.00
 MME. DE VERNEVILLE, white 4.00 35.00
 FELIX CROUSSE, red 4.00 35.00
 VENUS, shell-pink 3.50 30.00
 FESTIVA MAXIMA, white 4.00 35.00
 EDULIS SUPERBA, pink 4.00 35.00
 GENERAL BERTRAND, pink 3.50 30.00
 COURONNE D'OR, white 4.00 35.00
 QUEEN VICTORIA, white 3.50 30.00
 THE MOOR, purple 4.00 35.00
 CLARA BARTON, white 4.00 35.00
 PINK PEONIES, not named 2.50 20.00
 WHITE PEONIES, not named 3.00 25.00
 RED PEONIES, not named 3.00 25.00
 PARKER'S PEONY FARM AND NURSERY
 Fayetteville, N. Y.

PEONIES

Strong 3 to 5-eye divisions. Per 100

Lonsfellow, red\$0.60 \$0.55
 Martha Bulloch, fine pink65 .60
 Mons. Jules Elie, early pink40 .35
 Richard Carvel, best early red70 .65
 Double red or pink30 .25
 Cash. Packing free. F.O.B. Marshalltown.

WHEELLOCK WILSON NURSERY
 Marshalltown, Ia.

PEONY SPECIAL
 Select 3 to 5-eye divisions Per 1000
 Karl Rosenfeld\$250.00
 Rachel 250.00
 Write for quantity quotations.

THE SHENANDOAH NURSERIES
 Shenandoah, Ia.

TREE AND FERN-LEAVED PEONIES
 SPECIES AND CUT-FLOWER PEONIES.
 ATHA GARDENS, WEST LIBERTY, O.

PHLOX

HARDY PHLOX

Ask for our new listing on field-grown garden Phlox and Phlox subulata (Creeping Phlox). If interested in 5000 or more plants, ask for our special quantity discount.

WALTERS GARDENS
 R. R. 2 Zeeland, Mich.

PIERIS

Pieris floribunda, field-row, 3 yrs. old, 9 ins., real nice bushy plants, ready for mail order or sales yard; bare-root, \$1.00 each, per 100; 85¢ each, per 1000.

Cedarhurst Nurseries, Inc., 3044 Pawtucket Ave., East Providence, R. I.

PIERIS

Fall 1958	Heavy stock	Spring 1959
B&B	Each	Each
10 to 12	.....\$1.25	
12 to 15	..... 1.50	
15 to 18	..... 2.00	

LINERS

From open field rows Each

4 to 6\$0.20
 6 to 830
 8 to 1040

1958 FALL ONLY Each

3 to 6, 1-yr. transplants\$0.15
 Well-branched. Good color.

Free packing.
ECKHART NURSERIES
 16 Toppa Blvd. Newport, R. I.

Pieris japonica (Jap. Andromeda), strong rooted seedlings, 1 to 2 ins., \$5.00 per 100, \$50.00 per 1000. 2-yr. transplants, 6 to 9 ins., \$40.00 per 100, \$350.00 per 1000. Heavy field-row stock, 3 yrs. old, 9 to 12 ins., ready for mail order, canning or sales yard; heavy bare-root, \$1.00 each, per 100; 85¢ each, per 1000; 65¢ each, per 5000 and up. No packing charges.

Cedarhurst Nurseries, Inc., 3044 Pawtucket Ave., East Providence, R. I.

ANDROMEDA (PIERIS JAPONICA)

One of the most beautiful broad-leaved Evergreens. Per 100 Per 1000

2 to 3-in., 1-yr., T.\$ 8.00 \$ 75.00
 3 to 5-in., 1-yr., T. 14.00 120.00
 6 to 8-in., 2-yr., TT. 20.00 190.00

PLANE VIEW NURSERY
 1355 W. Main Rd. Newport, R. I.

POPPIES

ORIENTAL POPPIES

Strong, true-to-name, field-grown roots. Write for America's most modern wholesale Oriental Poppy list or see partial list in August 1 issue.

FLOR-ACRES, BRIDGMAN, MICH.

PRIVET

PRIVET

Low, dense Privet. Very thick, heavy, very dwarf, sometimes called Box Privet.

	Per 10	Per 100
5000 9 to 12 ins.	.....\$2.00	\$14.00
2500 12 to 15 ins.	..... 2.25	18.00
5000 15 to 18 ins.	..... 2.50	22.00
3000 18 to 24 ins.	..... 3.50	30.00

Ask for prices on 1000 lots. Good discounts to move entire lots.

THE MOSES NURSERIES, LIMA, N. Y.

Thousands of Amur River North Privet.

	Per 100	Per 1000
18 to 24 ins.	.....\$3.00	\$25.00
2 to 3 ft.	..... 4.00	30.00
3 to 4 ft.	..... 5.00	40.00

Immediate shipment. Satisfaction guaranteed. Robinson Nursery Co., Greenville, Ga.

Small Ads Do Great Things in the American Nurseryman Classified Section.

RHODODENDRONS

FIFTY THOUSAND OWN-ROOT RHODODENDRONS

A wide range of hardy varieties in 1, 2 and 3-yr. plants. Come and see for yourself to compare quality and prices, or just come and talk Rhododendrons, if you prefer.

WELLS NURSERY
 P. O. Box 141 Red Bank, N. J.
 Phone SHadyside 1-0180

RHODODENDRONS HYBRID RHODODENDRONS

Landscape sizes
 Different colors
PARMENTIER'S ROSES
 Grady St. Bayport, L. I., N. Y.
 Phone Bayport 5-0811

100,000 hybrid Rhododendrons, 2000 varieties, 12 to 15 ins., \$1.50 up; 15 to 18 ins., \$2.95. Bigger sizes up to 3 ft. Also all other nursery items.

Kordus Nursery, Deer Park Ave., R. 4, Box 152, Huntington, N. Y.

RHODODENDRON MAXIMUM
 Nursery-grown and collected. 2 to 7 ft. high. Well-shaped, symmetrical plants.
CURTIS NURSERIES, INC.
 Callicoon, N. Y.

HYBRID RHODODENDRONS LITTLE TREE NURSERIES

Rowley, Mass.

ROSEBUSHES

ROSES

The BEST of the old, the NEWEST of the new.
 A. A. R. S. WINNERS! STARFIRE and IVORY FASHION. Naturally matured, carefully harvested and generously graded. Catalogs now available. Buy the best. "BUY KLYN'S."
GERARD K. KLYN, INC., MENTOR, O.
 Wholesale Rose Growers and Nurserymen IN THE HEART OF FAMOUS LAKE CO.

MULTIFLORA ROSE

Top quality plants for living fences and conservation plantings.

Root-crown caliper	Approximate height	Per 1000
2 to 3 mm.	8 to 16 ins.	\$12.50
3 to 5 mm.	12 to 18 ins.	17.50
5 to 8 mm.	18 to 24 ins.	22.50
8 to 12 mm.	24 to 36 ins.	35.50

UNDERSTOCK. Straight shanked seedlings grown especially for understock, Nemato-free. Expertly graded to suit the most particular.

4 to 6 mm.\$27.50 per 1000
 2 to 4 mm. 17.50 per 1000

The above prices are F.O.B. Griggsville, Ill., nursery. All tops cut back to 10 ins. at shipping unless otherwise requested. Our storage facilities are the best. ORDER NOW for delivery this fall, winter or spring. 10 per cent discount in lots of 10,000 or over; special quotations on larger quantities. For less than 1000 add 50¢ per cent. Packing at cost.

FARM LANDSCAPE CO.

Route 3 Urbana, Ill.

MINIATURE ROSES

Beautiful little darlings like miniature Hybrid Teas, seldom over 10 ins. tall. The plants we sell are own-root from 2½-in. pots.

Variety	Per 10	Per 100
Juliette, large crimson	.....\$4.00	\$35.00
Midget (pat. 466), rose-red	..... 4.50	40.00
Tom Thumb (pat. 169), crimson	..... 4.50	40.00
Perla d'Alcanada, ruby-red	..... 4.00	35.00
Peggy Grant, P.R.R., rose	..... 4.00	35.00
Pink Joy (pat. 1378), pink	..... 4.50	40.00

gold center 4.50 40.00
 Patty Lou (pat. 1335), silvery pink 4.50 40.00
 Pixie (pat. 408), tiny white 4.50 40.00
 White Baby Star, white 4.00 35.00
 Snowflakes, white 4.00 35.00
 Presumida, like Tallman 4.00 35.00
 Jackie, gold and cream 4.50 40.00
 Baby Gold Star, gold 5.00 45.00

SPRING HILL NURSERIES CO.
 Dept. AN-12 Tipp City, O.

2-YR. FIELD-GROWN ROSEBUSHES

New list now ready. Processed or bare-root stock. Shipping starts in September and don't forget that we prepay our stock. Over 70 varieties to choose from. Also about 60,000 very heavy multiflora, ready for shipment this fall. Write for prices and attractive list of this stock.

ROSELAWN NURSERIES

Box 295 Willsboro, Tex.

THE SEASON'S BEST DEAL

See for yourself by sending for our 1957-58 trade list. WE STILL OFFER YOU A CHOICE OF BARE-ROOT AND PREPACKAGED, PATENT AND STANDARD ROSES. NEW LONDON ROSES "The Rose Nursery"

P. O. Box 876 Overton, Tex.

ROSEBUSHES

A WIDE ASSORTMENT OF REASONABLY PRICED HIGH-QUALITY ROSEBUSHES WITH FAST, COURTEOUS SERVICE IS WHAT YOU GET AT **MARTIN'S ROSE NURSERY**
 P. O. Box 155 Arp, Tex.

Phone UL-92191
 (A copy of our 1957-58 price list will be mailed to you upon request.)

FIELD-GROWN ROSEBUSHES FINEST QUALITY.

Hybrid Teas, floribundas, polyanthas and climbers. Price and variety list on request.
WELLS BROS. NURSERY
 Box 625 Lindale, Tex.

SEEDS

SHRUBS AND TREE SEEDS

For nurserymen, conservation, Christmas tree growers and others.

WOODLOT SEED CO.

Norway, Mich.
 Established 1936.

MAHONIA AQUIFOLIUM

U.S.D.A. certified seed, Wash. \$6.00 per lb., prepaid.

E. C. MORAN, STANFORD, MONT.

CHINESE CHESTNUTS

(Castanea mollissima)
 Grown from selected stock. Order now for fall delivery. Expect to have several tons. Less than 100 lbs., 35¢ per lb. 100 lbs. and over, 30¢ per lb.
KING'S NURSERY
 Drawer 1431 Auburn, Ala.

SEEDS—Continued

Clean seed and floated, per lb.
 Juniperus virginiana, Platt Neb., \$3.50.
 Juniperus virginiana, eastern Mo., \$3.00.
 Juniperus scopulorum, S.D. or Colo., \$4.00.
 Forestry Seed Service, Cuba, Kan.

SHRUBS AND TREES

HEDGES		Each
1400 Barberry, Greenleaf, 24 to 30 ins.	..	\$0.45
500 Barberry, Redleaf, 18 to 24 ins.	..	.45
2200 Privet, A.R., ext. hvy., 18 to 24 ins.	..	.15
600 Privet, Border, 5 to 4 ft.	..	.40
SHADE TREES		Each
40 Birch, European Wh., B&B, 2 ins.	..	\$10.00
50 Butternut, B&B, 1½ to 2 ins.	..	10.00
200 Chestnut, Chinese, 6 to 8 ft.	..	3.00
100 Linden, American, 6 to 8 ft.	..	2.50
150 Maple, Crimson King, 1 to 1½ ins.	..	6.50
150 Mountain Ash, European, 6 to 8 ft.	..	2.50
200 Sourwood, B&B, 2 to 3 ft.	..	2.50
100 Plane Tree, London, 1½ to 2 ins.	..	5.25
125 Sweet Gum, B&B, 6 to 8 ft.	..	4.75
500 Yew, 6 to 8 ft.	..	1.50
150 Tulip Tree, B&B, 5 to 6 ft.	..	4.00
50 Walnut, Black, B&B, 6 to 8 ft.	..	4.00
200 Willow, Weeping, green, 6 to 8 ft.	..	1.25
SHRUBS		Each
100 Chionanthus virg., 18 to 24 ins.	..	\$0.75
100 Cotoneaster divaricata, B&B, 3 to 4 ft.	..	2.00
100 Deutzia lemoinei, 15 to 18 ins.	..	.40
250 Deutzia scabra, 5 to 6 ft.	..	.50
100 Dogwood, Redtwig, 3 to 4 ft.	..	.50
300 Forsythia Arnold's Dwarf, 12 to 18 ins.	..	.35
700 Forsythia Spring Glory, 3 to 4 ft.	..	.60
300 Honeysuckle, Clavey's, 15 to 18 ins.	..	.35
1200 Honeysuckle, Zabeli, 2 to 3 ft.	..	.40
250 Hydrangea P.G., 2 to 3 ft.	..	.50
1000 Hypericum (St. John's Wort), 15 to 18 ins.	..	.30
200 Lilac, hybrids, 2 to 3 ft.	..	2.00
300 Lilac, Persian, 3 to 4 ft.	..	.50
250 Lilac, Persian, 4 to 5 ft.	..	.60
50 Lilac, Japanese Tree, 4 to 5 ft.	..	1.10
600 Mock Orange, virginiana, 2 to 3 ft.	..	.45
200 Mock Orange, virginiana, 3 to 4 ft.	..	.55
50 Photinia, Oriental, B&B, 4 to 5 ft.	..	2.25
400 Spiraea A. Waterer, 18 to 24 ins.	..	.50
350 Spiraea, Froebel's, 2 to 2½ ft.	..	.50
300 Spiraea prunifolia plena, 2 to 3 ft.	..	.50
350 Spiraea vanhouttei, 3 to 4 ft.	..	.50
100 Viburnum molle, 3 to 4 ft.	..	.55
200 Viburnum opulus nanum, 15 to 18 ins.	..	.85
100 Viburnum opulus sterile, 4 to 5 ft.	..	.70
100 Viburnum tomentosum, 2 to 3 ft.	..	.50
100 Viburnum wrightii, 3 to 4 ft.	..	1.50
100 Witch Hazel, 2 to 3 ft.	..	1.10

THE HOME NURSERY

Corliss Ingels
 140 miles southwest of Chicago
 at junction of Rt. 17 and 78 in Stark County
 Since 1887
 LaFayette, Ill.

SHRUBS AND TREES		Per 100
Euonymus, alatus comp., 12 to 15 ins.	..	\$ 60.00
15 to 18 ins.	..	70.00
18 to 24 ins.	..	95.00
vegetus, 10 to 12 ins.	..	60.00
12 to 15 ins.	..	75.00
15 to 18 ins.	..	100.00
18 to 24 ins.	..	150.00
15 to 18 ins.	..	85.00
18 to 24 ins.	..	95.00
15 to 18 ins.	..	35.00
18 to 24 ins.	..	50.00
2 to 3 ft.	..	60.00
2 to 3 ft.	..	75.00
5-yr., TT, 10 to 12 ins.	..	80.00
5-yr., TT, 10 to 12 ins.	..	70.00
5-yr., TT, 10 to 12 ins.	..	65.00
5-yr., TT, 10 to 12 ins.	..	75.00
5-yr., TT, 10 to 12 ins.	..	135.00
5-yr., TT, 10 to 12 ins.	..	210.00
5-yr., TT, 10 to 12 ins.	..	325.00
5-yr., TT, 10 to 12 ins.	..	70.00
5-yr., TT, 10 to 12 ins.	..	80.00
5-yr., TT, 10 to 12 ins.	..	165.00
5-yr., TT, 10 to 12 ins.	..	220.00
5-yr., TT, 10 to 12 ins.	..	300.00
5-yr., TT, 10 to 12 ins.	..	110.00
5-yr., TT, 10 to 12 ins.	..	155.00
5-yr., TT, 10 to 12 ins.	..	200.00
5-yr., TT, 10 to 12 ins.	..	280.00

2 per cent for cash with order.

LINCOLN NURSERY

R. D. 2 Grand Rapids 4, Mich.

FALL SURPLUS		Each
100 Hardy Cedar of Lebanon, 3-yr.	..	\$3.00
50 Cladrastis lutea, 6 ft., XX.	..	3.00
25 Maackia amurensis, 4 to 5 ft., XX.	..	3.00
25 Ilex opaca, 2 to 3 ft., pickup.	..	2.50
25 White Dogwood, 6 to 7 ft., pickup.	..	5.00

Cash with order.

BRIMFIELD GARDENS NURSERY

245 Brimfield Rd. Wethersfield 9, Conn.

2½-in. potted plants, 10c each: Pfitzer Juniper, Magnolia, Boxwood, Nandinas, Baker's Thuja, Abelia and Forsythias.
 Rooted cuttings, 5c each: Pfitzer Juniper, Euonymus japonicus, Wax-leaved Ligustrum, Boxwood, Jacobinias, Crassula arborescens, 3c each. Cash with order.
 Carden's Nursery & Cut Flowers, 4201 North St., Fort Smith, Ark.

ROOTED CUTTINGS, 1-YR., BEDDED

	Per 100	Per 1000
Buxus sempervirens, 4 to 6 ins.	\$10.00	\$ 90.00
Ilex bullata, 4 to 6 ins.	10.00	90.00
Juniper, Andorra, 4 to 6 ins.	12.00	100.00
Pyracantha lalandi, 4 to 6 ins.	10.00	90.00
Chamaecyparis squarrosa veitchii, 4 to 6 ins.	12.00	100.00
Chamaecyparis pisifera aurea, 4 to 6 ins.	12.00	100.00
Chamaecyparis lutescens, 4 to 6 ins.	10.00	90.00
Juniperus hetzli, 4 to 6 ins.	12.00	100.00
Juniperus pfitzeriana, 4 to 6 ins.	12.00	100.00
Juniperus stricta, 4 to 6 ins.	12.00	100.00
Pachysandra, 4 to 6 ins.	4.00	35.00
Pyracantha lalandi, potted, 4 to 6 ins.	15.00	100.00
Retinospora plumosa aurea, 6 to 8 ins.	10.00	90.00
Taxus brevifolia, 4 to 6 ins.	10.00	100.00
Taxus capitata, tips, 6 to 8 ins.	15.00	125.00
Taxus cuspidata, 4 to 6 ins.	12.00	100.00
Taxus hatfieldii, 4 to 6 ins.	12.00	100.00
Taxus hicksii, 4 to 6 ins.	12.00	100.00
Taxus repandens, 4 to 6 ins.	12.00	100.00
Thuja globosa, 5 to 8 ins.	12.00	100.00
Thuja pyramidalis, 4 to 6 ins.	10.00	90.00
Thuja nigra, 5 to 8 ins.	10.00	90.00
Chamaecyparis cyano viridis, 4 to 6 ins.	20.00	100.00

2-YR., BEDDED

Taxus cuspidata	225.00	\$200.00
Taxus hicksii	25.00	200.00
Ilex crenata	20.00	150.00
Ilex bullata	20.00	150.00

1-YR. SEEDLINGS

Cornus florida	5.00	\$40.00
Taxus capitata	5.00	40.00
Chinese Chestnut, 18 to 24 ins.	10.00	75.00

2-YR. SEEDLINGS

Acer palmatum, 6 to 12 ins.	8.00	...
Fagus sylvatica, 6 to 12 ins.	10.00	90.00
Chinese Chestnut, 18 to 30 ins.	15.00	...
Taxus capitata, 4 to 6 ins.	7.00	60.00

3-YR. SEEDLINGS, TRANSPLANTED

Taxus capitata, 5 to 8 ins.	\$12.00	\$100.00
4-YR. SEEDLINGS, TRANSPLANTED		
Picea pungens glauca, 6 to 10 ins.	\$12.00	\$100.00
Tsuga canadensis, 5 to 8 ins.	10.00	95.00
Tsuga canadensis, 8 to 10 ins.	15.00	140.00
Tsuga canadensis, 10 to 12 ins.	20.00	190.00
Thuja occidentalis, 8 to 12 ins.	12.00	...
Taxus capitata, 6 to 10 ins.	15.00	...
Pinus strobus, 8 to 10 ins.	10.00	100.00
Leucothoe catesbaei, 8 to 12 ins.	35.00	...

VAN DINE NURSERY

287 Berdan Ave. Peakness, N. J.

ARBORVITAE

American, 2½ to 4½ ft.	\$1.75 to \$2.50.
Baker, 2 to 3½ ft.	\$1.50 to \$2.00.
Elegantissima, 2 to 3½ ft.	\$1.75 to \$2.25.
Globe, 1 to 2½ ft.	\$1.50 to \$2.00.
Golden, 1½ to 3 ft.	\$1.50 to \$2.00.
Biota aurea nana, 1 to 2½ ft.	\$1.50 to \$2.00.

JUNIPERS

Andorra, 1 to 2½ ft.	\$1.75 to \$2.25.
Burk, 2 to 4½ ft.	\$1.75 to \$2.75.
Irish, 2½ to 4 ft.	\$1.75 to \$2.25.
Swedish, 2½ to 4 ft.	\$1.75 to \$2.25.
Pfitzer, 1 to 2 ft.	\$1.75 to \$2.50.
Golden Tip, 1 to 2 ft.	\$1.75 to \$2.50.
Hetz (glauca), 1 to 2½ ft.	\$1.75 to \$2.25.
Armstrong, dwarf, 1 to 2½ ft.	\$2.00 to \$2.50.
Blue, 1 to 2½ ft.	\$1.75 to \$2.25.
Von Ehron, 1 to 2½ ft.	\$1.75 to \$2.25.

Hicks, 1 to 2½ ft.	\$2.00 to \$3.00.
Spreading, 1 to 2 ft.	\$2.00 to \$3.00.
Columnar (Adams), 1 to 4 ft.	\$4.00 to \$8.00.
Sugar Maple, 1 to 3-in. cal.	\$1.50 to \$7.50.
Chinese Elm, 1 to 3-in. cal.	\$1.00 to \$5.00.

FOULBROS NURSERY

507 W. Eaton Pike Richmond, Ind.

BEAUTIFUL NURSERY-GROWN

SUGAR MAPLES

25 6 to 8 ft.	\$3.00; 75 8 to 10 ft.	\$4.50.		
210 1½ to 2-in. cal.	\$8.00; 50 2 to 2½-in. cal.	\$12.00; 10 2½ to 3-in. cal.	\$17.50.	
Chinese Elm, nursery-grown; 100 4 to 6 ft.	85c; 100 6 to 8 ft.	\$2.00; 50 8 to 10 ft.	\$3.50.	
Collected Sugar Maples in quantity, from open fields. Selected good tops, 4 to 6 ft.	75c; 6 to 8 ft.	\$1.25; 8 to 10 ft.	\$2.50; 1½ to 2-in. cal.	\$4.00.
Larger sizes up to 5-in. cal., except 2½-in. cal.	Approximately 800 to 1000 collected Chinese Elm, open field, good liners or mail order. Our loss less than 2 per cent. 4 to 6 ft.	50c; 5 to 8 ft.	\$1.00; 8 to 10 ft. (limited).	\$2.00.
Over 500, 10 per cent off.	Myrtle, Euonymus, Lillacs, Yews, Ilex convexa, Red Barberry, upright Junipers, Rhododendrons (grafts), liners, 18 to 24 ins.	Limited amount on request.		

VAUGHAN'S NURSERY

15910 Cleveland Rd. Granger, Ind.

exa, Red Barberry, upright Junipers, Rhododendrons (grafts), liners, 18 to 24 ins. Limited amounts.

**VAUGHAN'S NURSERY
& GREENHOUSE PRODUCTS**

5910 Cleveland Rd. Granger, Ind.

Young's Nursery, Forest Hill, La.

Pyracantha lalandi, Jasminum nudiflorum, rooted cuttings, \$10.00 per 100. Ivy, Vinca minor, Yews, golden var. Privet, golden var. Honeyaukie. Write for 2 per cent.

Bart's Nursery, Fullerton, Pa.

CHINESE ELM

1 to 1½-in. cal.	Each, 100	\$ 2.00
1½ to 2-in. cal.	..	3.00
2 to 2½-in. cal.	..	4.00
2½ to 3-in. cal.	..	5.00

SILVER MAPLE

1 to 1½-in. cal.	Each, 100	2.75
BIRCH, EUROPEAN WHITE		
Single, 1½ to 2-in. cal., B&B	..	10.00
2 to 3-in. cal., B&B	..	16.00
Multiple, 12 to 15 ft., B&B	..	12.00

SCOTCH PINE

TT, 2 to 3 ft., B&B	..	1.60
3 to 4 ft., B&B	..	3.10

AMERICAN ARBORVITAE

15 to 18 ins., B&B	..	1.70
18 to 24 ins., B&B	..	2.20
24 to 30 ins., B&B	..	2.70
3 to 4 ft., B&B	..	3.20

25 at 100 rate; add 10 per cent for less than 25.

Write for complete price list.

RICHARDSON NURSERIES, INC.

53947 Fir Rd., R. 1 Granger, Ind.

ALPINE CURRANT

Each, 100	1000
6 to 12 ins., T. lining-out	\$0.12 \$0.11
9 to 12 ins. finished	.25 .20
12 to 15 ins.	.40 .35
15 to 18 ins.	.50 .45
18 to 24 ins.	.60 .55
24 to 30 ins.	.80 .75

Euonymus alatus, heavy, from cuttings

18 to 24 ins.	1.40
24 to 30 ins.	1.65

Siberian Arborvitae (B&B)

15 to 18 ins.	\$3.00
18 to 24 ins.	3.75
24 to 30 ins.	4.50

Hard Maple, straight, nursery-grown transplants

4 to 5 ft.	\$1.00 \$0.90
5 to 6 ft.	1.25 1.25
6 to 8 ft.	1.75 1.65

Hemerocallis Yellowstone, 60c each, per 100.

RED WING NURSERY, RED WING, MINN.

EVERGREENS, WHOLESALE

A wide selection of Evergreen seedlings and transplants, also hardwoods, shade trees, ornamentals, shrubs and flowering trees. Our selected seed with good heredity and scientific culture assures healthy trees with heavy roots for rapid growth. Musser offers quality trees at a price made possible through large quantity production. No charge for packing and boxing. Ask for complete catalog and wholesale planting lists.

Our ad, which appears on page 18 of this issue, shows a partial list of seedlings and transplants.

MUSSEY FORESTS

Box 16-IC Indiana, Pa.

EUTONYMUS VEGETUS

Heavy, well-sheared.
 Bare-root, 15 to 18 ins., \$1.00; 18 to 24 ins., \$1.25. (Balled and burlapped 35c per plant extra.)

CORNUS FLORIDA

(White-flowering Dogwood)
 B&B, 2 to 3 ft., \$1.50; 3 to 4 ft., \$1.75; 4 to 5 ft., \$2.25.

JUNIPERUS hetzli, B&B, 15 to 18 ins., \$1.90.

BIOTA aurea nana, B&B, 12 to 15 ins., \$2.00.

ARBORVITAE globe, B&B, 12 to 15 ins., \$1.50.

THE FRENCH NURSERY CO. Clyde, O.

SURPLUS STOCK

10,000 Chinese Elm, excellent quality.
 5 to 6 ft. \$ 50.00 per 100
 6 to 8 ft. 75.00 per 100
 8 to 10 ft. 100.00 per 100
 10 to 12 ft. 150.00 per 100
 1½ to 2-in. cal. 200.00 per 100

Write for our fall and winter price list.

Shade trees and evergreens specialties.

ROLLERS WHOLESALE NURSERY

Rogers, Ark.

NURSERY STOCK

TAXUS, RHODODENDRONS, JAPANESE MAPLE, AZALEAS, HOLLIES, MAGNOLIAS, DOGWOODS and other choice foundation planting stock in both finished and lining-out grades. Catalog upon request. Buy the best. "BUY KLYN'S."

GERARD K. KLYN, INC., MENTOR, O.

Wholesale Rose Growers and Nurserymen

IN THE HEART OF FAMOUS LAKE CO.

SHRUBS AND TREES

Norway Maple, to 4-in. caliper; Silver Maple, Pin Oak and other popular shade trees. Quality selected, finished Evergreens, carefully balled and burlapped. Check our list of shrubs, hedge plants and liners. We'll be pleased to send our price list.

Quercus rubra (Red Oak), root-pruned, field specimens, 2 to 8-in. caliper.
R. H. Rogers Nursery, Cooperstown, N. Y.

TAXUS

TAXUS CAPITATA
The seed was imported from Japan. The plants are strong selected 4-yr. transplants. Two years ago when the stock was transplanted, only selected plants were picked to grow on.
Per 100 Per 1000
4-yr. T. 10 to 15 ins., heavy, \$0.45 \$0.40
C. HOOGENDOORN, NURSERYMAN
413 Turner Rd. Newport, R. I.

TAXUS
Finished landscape material.
First quality. Priced to sell.
Vermouleni, 3 1/2 to 4 ft. \$8.00 each, per 10
Capitata, 3 1/2 to 4 ft. 8.00 each, per 10
Taxus, Arborvitae, Ilex, trees in variety.
Price list on request.
B. F. BARR & SON NURSERIES
Lancaster, Pa.

Taxus, liners, 50,000 (10,000 of each variety). Hatfield, densiformis, henryi, thayerae, hicksii. Extra heavy 2-yr.-old, transplanted, certified stock, 45c each, per 100; 40c each, per 1000; 35c each, per 5000 and up. Ship beetle zone or outside beetle zone.
Cedarhurst Nurseries, Inc., 3044 Pawtucket Ave., East Providence, R. I.

VIBURNUMS

VIBURNUMS
500 Viburnum dentatum, 18 to 24 ins., 40c ea.
750 Viburnum dentatum, 2 to 3 ft. 50c ea.
700 Viburnum dentatum, 3 to 4 ft. 60c ea.
200 Viburnum dilatatum, 2 to 3 ft. 60c ea.
200 Viburnum dilatatum, 3 to 4 ft. 75c ea.
300 Viburnum lantana, 2 to 3 ft. 35c ea.
This is heavily branched material.
THE MOSES NURSERIES, LIMA, N. Y.

VIBURNUM CARLESI COMPACTA (NEW)
This is a compact form of Viburnum carlesi with dark green leaves and buds up very readily.
Per 100 Per 1000
Strong 2-yr. grafts \$1.50 \$1.25
C. HOOGENDOORN, NURSERYMAN
413 Turner Rd. Newport, R. I.

VINES

LARGE-FLOWERING CLEMATIS VINES
1-yr. container grown, 75c each.
Comtesse de Bouchaud, pink
Ernest Markham, red
Ville de Lyon, red
Fall delivery. Cash with order.

FOUR STAR NURSERY
8215 23th St. S.
Edmonds, Wash.

SUPPLIES

BURLAP

NEW BURLAP
100 to 125-yd. bolts or squares cut to size.
Heavyweight Medium wt. squares
burlap bolts Per 100 pieces
35-in. \$0.21 1/2 yd. 16x16 ins. \$ 3.60
40-in.22 1/2 yd. 20x20 ins. 5.30
45-in.24 1/2 yd. 24x24 ins. 7.50
48-in.26 yd. 27x27 ins. 9.40
54-in.29 yd. 30x30 ins. 11.40
60-in.32 1/2 yd. 36x36 ins. 17.20
72-in.40 1/2 yd. 40x40 ins. 20.20
Other sizes on request. Lightweight erosion cloth, many widths; paper squares. Polyethylene, twine, Saran mesh slats. Minimum order \$50.00. Freight prepaid if check sent with order.

SEAMAN BAG CO.
Growers Service Div.
2512 S. Damen Ave. Chicago 8, Ill.

HOLLAND BURLAP—Woven for All Needs.
STANDARD, BOSKOOP, COMPACT.
Coppered Rot Not and Two Season Rot Proof.
HALF MOON CO., Box 27A, Plainfield, N. J.

CANE STAKES

LIGHTNING SERVICE
ON
FRESHLY IMPORTED
JAPANESE BAMBOO CANE STAKES
from
NEW YORK, CHICAGO, PORTLAND, ORE.
Write for our competitive prices
and generous quantity discounts.
McHUTCHISON & CO.
695 Grand Ave. Ridgefield, N. J.
2505 S. E. 11th Ave. Portland 2, Ore.
OUTDOOR BAMBOO STAKES.
All sizes for immediate delivery.
Ask for our Nursery Supply List.
HALF MOON CO., Box 27A, Plainfield, N. J.

WANTED

WANTED
100 Erica carnea, 18 to 24 ins.
100 Salix purpurea nana
100 Pachistima canbyi, 4 to 6 ins.
20 Potentilla Gold Drop, 12 to 18 ins.
16 Azalea mollis Chevalier de Reali, 12 to 15 ins.
14 Vaccinium corymbosum (Blueberry), 30 to 36 ins.
10 Ampelopsis veitchii, 2-yr. pots
15 Forsythia suspensa, 30 to 36 ins.
4 Prunus sup. autumnalis, 3 ft.
2 Chionanthus virginicus, 6 to 6 1/2 ft.
2 Oxydendrom arboreum, 8 to 10 ft.
1 Photinia villosa, 5 1/2 to 6 ft.
3 Fagus americana, 1 to 1 1/2 ins.
2 Crataegus oxy. rosaplena, 3 ft.
2 Crataegus oxy. rosaplena, 3 ft.
40 Taxus canadensis stricta, 12 to 15 ins.
CHRIS CHRISTENSEN LANDSCAPING
SERVICE
625 Reeseville Rd. Coatesville, Pa.

WANTED

OSTRYA, in small sizes for growing.
Please advise quantities available with sizes and prices.
HENKELS & MCCOY
6100 N. 20th St.
Philadelphia 38, Pa.
Phone Victor 3-7000
WANTED—TAXUS
Unrooted cuttings of Taxus, densiformis, wardii, browni, Adams columnaris. October 15 to March 15.
MIAMI NURSERY CO.
Route 2 Tipp City, O.
If you don't find it listed here try a Want Ad in the next issue of the American Nurseryman.

MISCELLANEOUS

MISCELLANEOUS Per 1000
Privet (Amur River) North, heavy tops and roots, 1-yr., uniform, \$48.00
Pachysandra, rooted cuttings 50.00
English Ivy, rooted cuttings 50.00
Andorra Juniper, Taxus, rooted cuttings, \$10.00 per 100.
IVYDALE NURSERY
Route 1 Gallipolis, O.
Excellent, finished stock, priced to sell quickly. Mountain Ash, Cotoneasters, Black Hills Spruce, Mugho Pine, Junipers, rock plants, Sempervivus, 4 kinds; etc.
The Pequot Nurseries, Brainerd, Minn.
Phone 2053.

Surplus Stock
can be easily and quickly turned into Cash
by listing it in the
American Nurseryman Classified Ads

BAMBOO CANE STAKES
For greenhouse and nursery purposes.
All types and sizes.
Write for prices and quantity discounts.
ALEC HENDERSON, INC.
1313 W. Randolph St. Chicago 7, Ill.

CHRISTMAS TREES

CHRISTMAS TREES
Scotch Pine, 5 to 8 ft., select, pruned, plantation-grown trees from Western Michigan's Ottawa County. Will deliver in truck-trailer quantities within 400-mile radius. Write or phone.
R. D. MILLER NURSERY
R. 4, Wood St. Lansing, Mich.

CHRISTMAS TREES
Fresh cut native Balsam and Spruce, ungraded; some good, some fair, some poor. 5 to 8 ft. tall, \$50.00 per 100 trees. Write or visit early for more details.
HARVARD TREE FARM
(H. L. NYE)
Pleasant St. Athol, Mass.

Classified Ads Offer Maximum Results at Minimum Cost.

CONTAINERS

KNOCKED-DOWN CANS
(Pat. No. 2833087)
Shipped and stored flat.
New tin sheet metal cans, now available in 3 sizes, to enable nurserymen and retailers to sell roots with their stock. Grow in tin cans that will eliminate your packaging and replacement problems.
Write for prices and sizes.
BENSON & WEDDING
Knocked-Down Cans
16730 Sayre Ave. Tinley Park, Ill.

COLOR TAGS

COLOR PICTURE TAGS
Quick shipment. Reasonably priced.
Shrubs, shade, fruits, vines, flowering trees, etc. Write for price list.
GLOBE NURSERIES
Box 249 McMinnville, Tenn.

DECORATIVES

PINE CONES, 1/4-IN. TO FT. LONG
Illustrated folder. Many species.
Choice all-cone Christmas wreaths.
WESTERN TREE CONES
1925 Brooklane Corvallis, Ore.

FERTILIZERS

PETERS SPECIAL.
CONTAINER-GROWING FERTILIZERS
All materials listed are ideal for container-growing purposes.
SOLUBLE FERTILIZERS
21-7-7 Azalea Neutral (non-acid forming)
21-7-7 Azalea Acid (heavy acidifying action)
Both above, \$6.50 per 25-lb. bag.
\$22.00 for 4 25-lb. bags.
20-20-20 General Purpose Feed
\$7.00 per 25-lb. bag; \$24.00 for 4 25-lb. bags.
LONG-LIFE FEEDS
13-6-6 Organic Special Du Pont Uramite
Nitrogen and highest grade natural organics. The finest long-life dry feed. Unexcelled for containers.
\$7.50 per 25-lb. bag; \$28.00 for 4 25-lb. bags.
Du Pont Uramite, 38 per cent nitrogen from methyl-urea, \$12.00 per 50-lb. bag.
Also available: Chelated Iron, Chelated Trace Element Complexes, Fritted Trace Elements, etc.
FRITTED POTASH
Contains 32 per cent K2O, plus fritted trace elements. Will not leach away. Gives 6 to 9 months' assured supply of Potash, regardless of leaching rain or heavy watering, \$9.00 per 25-lb. bag; \$36.00 per 25-lb. bag for 4 to 39 bags.

Write for complete price list.
Freight prepaid, east of Mississippi, on all orders totaling 300 lbs. or more of above materials. Less than 300 lbs., F.O.B. Allentown, Pa.
ROBERT B. PETERS CO.
223 N. 15th St. Allentown, Pa.

FLATS

CYPRESS FLATS
Shipped from Williamston, N. C.
WHITE CEDAR FLATS
Shipped from Cook, Minn.

Order by No.	Price	Wt. per	Cy- Cedar press
	Per	per	per
	100	100	100
No. 1, 14x20x2 1/2-in.	\$27.00	320	400
No. 2, 14x20x3 1/2-in.	31.50	400	500
No. 3, 12x16x2 1/2-in.	20.75	260	325
No. 4, 12x16x3 1/2-in.	24.50	275	345
No. 5, 14x16x2 1/2-in.	23.25	275	345
No. 6, 14x16x3 1/2-in.	27.50	290	365
No. 7, 15x22 1/2x2 1/2-in.	30.75	380	475
No. 8, 15x22 1/2x3 1/2-in.	35.50	425	535
No. 9, 11 1/4x22 1/2x2 1/2-in.	25.00	320	400
No. 10, 11 1/4x22 1/2x3 1/2-in.	29.00	400	500
No. 11, 14x16x5-in.	32.75	460	560
No. 12, 6x11x5-in.	16.75	160	200
No. 13, 6x16x5-in.	19.00	215	270
Plant boxes, 5x8 1/2x2 1/2-in.	5.50	45	60

Skeleton flats to carry TEPAKs and similar growing containers. (Write us for price list.)
All other sizes quoted on request.
Above prices apply to both Cypress and Cedar.
5 per cent discount on orders of 1000 or more; 10 per cent discount on carloads of 30,000 lbs. or more.
The above sizes are inside measurements. Bottoms and sides are 3/4-in. thick and ends are 1/2-in. thick. All material surfaced on one side.
Your name and address printed, up to 3 lines in black ink, on one or both end pieces at the following rates: \$1.00 setup charge, plus 3/4c per end piece for the first 1000 ends; 1/4c per end thereafter.
Write inquiries and orders for White Cedar flats to Cook, Minn., and for Cypress flats to Williamston, N. C.
Shipped knocked-down in units of 25, F.O.B. mills. All shipments by truck unless otherwise specified. Attach check. Order by number, especially if by telegram.
H. C. HILL & SONS
Manufacturers of flats, boxes, wood turnings and specialties.
Phone North 6-3348, Cook, Minn.
Phone Swift 2-4127, Williamston, N. C.

REDWOOD FLATS, K.D.
Finest stock obtainable. Guaranteed all clear heart. Size 20x15x3 ins. inside measure, \$38.00 per 100.
1x1-in. Cypress stakes, pointed.
50 pcs. to bundle, 4 ft., \$3.50 per bdl.
50 pcs. to bundle, 5 ft., \$4.50 per bdl.
50 pcs. to bundle, 6 ft., \$5.50 per bdl.
Ship same day. Cash with order, please.
YOHO & HOOKER, YOUNGSTOWN 2, O.

LABELS

DAHLIA OR TREE LABELS	
	Priced per carton
	Plain Painted
2 1/2 x 5/8 ins., notched, not wired	\$3.00
3 1/2 x 5/8 ins., wired (copper)	\$3.95
POT LABELS	
4 x 5/8 ins. (cartons 1000 each)	3.95
5 x 5/8 ins. (cartons 1000 each)	4.30
6 x 5/8 ins. (cartons 1000 each)	4.70
	Priced per carton
	Plain Painted
8 x 5/8 ins. (cartons 500 each)	\$3.60
10 x 5/8 ins. (cartons 500 each)	4.20
GARDEN STAKES	
8 x 3/4 ins. (cartons 250 each)	3.00
10 x 3/4 ins. (cartons 250 each)	3.30
12 x 1 1/8 ins. (cartons 100 each)	2.00
Our labels are perfectly white and smooth on both sides and are pronounced by growers the best and most economical.	
Catalog on request.	
"We ship same day."	

YOHO & HOOKER, YOUNGSTOWN 2, O.

ORCHID SUPPLIES

HOOF AND HORN MEAL	
A slow acting source of nitrogen.	
1 lb., 20c; 25 lbs., \$4.50; 100 lbs., \$14.50.	
Priced F.O.B.	
WRIGHTWOOD FLORAL CO., INC.	
1420 Wrightwood Ave.	Houston 9, Tex.

PEAT MOSS

"BRODLEAF" Holland Peat Moss. Carlots. Standard 7 1/2 cft. Gardener 6 cft. and Halves. Jumbo for growers, two bales equal three. HALF MOON CO., Box 27A, Plainfield, N. J.

PLASTIC FILM

POLYETHYLENE FILM	
Sun-resistant black for mulching. .0015 mil.	
3 ft. x 500 ft.	\$ 7.70 per roll
3 ft. x 1000 ft.	15.40 per roll
Natural transparent only.	
.002 mil., all rolls 200 ft. long.	
4 ft. 2 ins. x 200 ft.	\$ 5.00 per roll
4 ft. 4 ins. x 200 ft.	12.00 per roll
Natural transparent and sun-resistant black.	
.004 mil., all rolls 100 ft. long.	
3 ft. x 100 ft.	\$ 5.00 per roll
4 ft. x 100 ft.	7.00 per roll
6 ft. x 100 ft.	11.00 per roll
8 ft. x 100 ft.	15.00 per roll
Minimum order 4 rolls. Write for low prices in quantity orders.	
Other sizes and mil. weights available up to 40 ft.	

Phone Baldwin 3-8277.
DAYTON NURSERY AND GARDEN SALES
P. O. Box 763 Dayton 1, O.

POLYETHYLENE FILM	
Natural transparent, made from Du Pont Alathon, the amazing film for greenhouses.	
.004 mil., all rolls 100 ft. long.	
3 ft. wide by 100 ft. long	\$ 8.00 per roll
4 ft. wide by 100 ft. long	8.00 per roll
6 ft. wide by 100 ft. long	12.00 per roll
8 ft. wide by 100 ft. long	16.00 per roll
Other sizes available up to 20 ft. wide.	
Send \$1.00 for liberal sample	
4 ft. x 10 ft., postpaid.	

Special deal for greenhouse construction.
5 rolls to 9 rolls, 25 per cent discount.
10 rolls or more, 33 1/2 per cent discount.

"We ship same day."
YOHO & HOOKER
520 Williamson Ave. Youngstown 1, O.

POLYETHYLENE FILM.	
2 mil. in 200-ft. rolls, 36 ins. wide, \$5.95;	
54 ins. wide, \$8.79; 108 ins. wide, \$17.34;	
4 mil. in 100-ft. rolls, 36 ins. wide, \$6.18;	
54 ins. wide, \$9.12; 126 ins. wide, \$20.20.	
5 rolls, less 10 per cent; 10 rolls, less 20 per cent. Also wider widths available.	
We pay freight if check is with order.	

ROUGH BROS.
4229 Spring Grove Ave. Cincinnati 23, O.

POLLY-Film and POLLY-Cloth, reinforced.
Polly Aluminum or Black, Rolls-Sheets.
Ask for Polly list and Nursery Supply list.

HALF MOON CO., Box 27A, Plainfield, N. J.

SPHAGNUM MOSS

NO. 1 SPHAGNUM MOSS
Large burlap bales, long fibered, clean, firmly packed; bale, \$1.20. Also ground moss.

JOSEPH JAMROS, CITY POINT, WIS.
Fresh, clean sphagnum moss, write or phone City Point 133 for our low prices on wirebound bales in truckloads or carlots.

Pure Sphagnum Moss Co., City Point, Wis.
Long-fibered sphagnum moss, also ground moss. Price us on truckloads delivered.

Warrens Moss Co., Warrens, Wis.

STAKES

STAKES, GALVANIZED HARD STEEL
GALVANIZED tree guying WIRE,
HOSE for guy wire PADDING.
Prices and samples sent on request.

SCHUPP SUPPLY CO., WILMETTE, ILL.

CYPRESS PLANT STAKES

50 pieces to bundle.	
1x1-in.—3 ft., pointed	\$3.00 per bundle
1x1-in.—4 ft., pointed	3.50 per bundle
1x1-in.—5 ft., pointed	4.50 per bundle
1x1-in.—6 ft., pointed	5.50 per bundle
1x1-in.—7 ft., pointed	7.00 per bundle

These stakes are made of cypress and redwood; are good, strong stakes and will give long service. "A little better than seems necessary."

WE SHIP SAME DAY!

YOHO & HOOKER

Youngstown 2, O.

Watch Your Results From
American Nurseryman Classified Ads.

TWINE

SALE—SISAL TWINE

First quality, choice of: Fine, medium or heavyweight in 1, 2 or 3 ply.

50-lb. reel	100 lbs.	250 lbs.
10-lb. tubes	\$0.39 lb.	\$0.29 lb.
5-lb. balls	.43 lb.	.33 lb.
5-lb. balls	.49 lb.	.39 lb.
Freight prepaid if check sent with order.		
Also, burlap, crepe and Poly-coated papers, shade and lath materials, Jute twines.		
SEAMAN BAG CO., GROWERS SERV. DIV.		
2512 S. Damen Ave. Chicago 8, Ill.		

GRAPE BREEDING BREAK

[Continued from page 83]

In 1955, Haig Dermen, at the agricultural research center, Beltsville, Md., treated an N. C. 6-16 plant with colchicine. This caused one branch to develop with double the usual number of chromosomes in the internal cells; that is, the tissues were changed from diploid with two sets of chromosomes, 39 in all, to tetraploid, with four sets, a total of 78. This branch bore a bunch of grapes and from the seeds Dr. Dermen grew 42 all-tetraploid seedlings.

But this does not finish the job. The 42 seedlings seem exactly alike genetically and the same as the tetraploid mother branch. Breeders must have genetically diverse stock in order to get crosses that give an interchange of desirable characteristics. Then they would be able to make selections and develop superior plants for different uses and areas.

Dr. Dermen tried a short cut. He had previously produced single-species tetraploids of both muscadine and bunch type. He now crossed these in hopes of producing fertile hybrids directly without further use of the drug. But no fruit developed—perhaps in part because of the polyploidy, or because of inherent strong incompatibility of the breeding material.

He was surprisingly successful, however, in producing new diploid crosses of the two types. Perfect-flowered muscadines were used as the male parents, the self-sterile bunch grapes Lindley, U. S. 519-28 and Franklin as the female. Lindley produced no seeds but U. S. 519-28 yielded a few, and Franklin gave a heavy set. Assuming that the diploid hybrid seedlings from these crosses would be sterile, Dr. Dermen immediately treated 75 of the most vigorous young plants with colchicine. A change to tetraploidy appears to

LOW COST
MONEY SAVERS

The Gledhill Land Leveler is a real time and labor saver. Versatile and job-proven to effectively perform all types of leveling jobs. It pays for itself. Fits any tractor with a 3-point lift.

SATISFACTION OR MONEY BACK
For further information write . . .

The
GLEDHILL

ROAD MACHINERY CO.
GALION, O.

PLASTIC TAGS

IDEAL FOR
GREENHOUSE OR FIELD



No. 60. Size 3/4x6 ins.

• RE-USABLE •

Erase and write again!

250	\$3.00 per lot
500	5.00 per lot
1,000	8.00 per 1000
2,000	7.75 per 1000
3,000 to 4,000	7.50 per 1000
5,000	7.25 per 1000
10,000	6.50 per 1000

Colors: Yellow, Red, Blue, Green and White. Colors may be combined for quantity price. Minimum 250 each color.

Net 30 days, F.O.B.

Grand Rapids, Mich.

Free delivery for check with order.

Write for price list and samples of plain and printed paper tags.

IMPERIAL TAG & PRINTING CO.
312 Straight, S. W. GRAND RAPIDS 4, MICH.

ROSS ROOT
FEEDER

A Summer Must!

Fights heat, drought,
burning winds. ONLY
\$5.98—with FREE box
plant food cartridges.



ROSS DANIELS, 207 Court, Des Moines, Ia.

HERE IS WHY NURSERYMEN PREFER MENNEPOTS



- Superior Strength** Sturdily constructed, the MENNEPOT withstands hard handling.
- Stapled Bottom** Comes completely assembled . . . Potting can start immediately upon arrival.
- Light Weight** The MENNEPOT is economical to use. Light weight makes shipping costs less.
- Drainage** The side-drainage feature makes waterlogging impossible while standing in salesyard.

Size 0 Top . . . 4 ins. Bottom 3 1/2 ins. High . . . 4 ins. Weight per 100 Regular 10 lbs., Heavy 25 Regular Weight Price 100. \$2.75 1000. \$25.00 Heavy Weight Price 100. \$3.75 1000. \$35.00	Size 0 1/2 Top . . . 5 ins. Bottom 4 ins. High . . . 5 ins. Weight per 100 Regular 13 lbs., Heavy 30 Regular Weight Price 100. \$3.50 1000. \$32.50 Heavy Weight Price 100. \$4.50 1000. \$42.50	Size 1 Top . . . 6 ins. Bottom . . 5 ins. High . . . 6 ins. Weight per 100 Regular 15 lbs., Heavy 35 Regular Weight Price 100. \$4.00 1000. \$37.50 Heavy Weight Price 100. \$5.25 1000. \$50.00	Size 2 Top . . . 7 ins. Bottom 5 1/2 ins. High . . . 7 ins. Weight per 100 Regular 24 lbs., Heavy 53 Regular Weight Price 100. \$4.50 1000. \$42.50 Heavy Weight Price 100. \$5.75 1000. \$55.00
Size 3 Top . . . 8 1/2 ins. Bottom 6 1/2 ins. High . . . 9 ins. Weight per 100 Regular 30 lbs., Heavy 70 Regular Weight Price 100. \$5.00 1000. \$47.50 Heavy Weight Price 100. \$6.25 1000. \$60.00	Size 4 Top . . . 10 ins. Bottom . . 8 ins. High . . . 10 ins. Weight per 100—120 lbs. 100. \$11.00 500. \$52.50 1000. \$100.00 *Heavy Only— For trees and shrubs.	Size 5 Top . . . 12 ins. Bottom . . 10 ins. High . . . 12 ins. L.G. POT Weight per 100—250 lbs. 20. \$30.00 ea. 100. \$27.50 500. \$125 1000. \$225 *Special for extra-heavy trees and large shrubs.	Size Pan Top . . . 8 1/2 ins. Bottom 7 1/2 ins. High . . . 5 ins. PAN Weight per 100 Regular 30 lbs., Heavy 70 Regular Weight Price 100. \$5.00 1000. \$47.50 Heavy Weight Price 100. \$6.25 1000. \$60.00

Distributors

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OHIO	Skoll Distributing Co., 560 E. 99th St., Cleveland, O. I. G. Harmon & Son, 1800 19th St., Canton 4, O.
PENNSYLVANIA	E. C. Geiger, North Wales, Pa. Verscharen's Garden Centers, Rt. 51, Brentwood, Pittsburgh, Pa. Rt. 88, S. Park, Pittsburgh, Pa.
NEW JERSEY	New Yorker Bag & Burlap Co., 651 Marshall St., Elizabeth, N. J. Somerset Rose Nursery, Inc., New Brunswick, N. J.
ILLINOIS	Quackenbush Industries, Inc., 9245 Cherry St., Franklin Park, Ill.
MICHIGAN	Michigan Bulb Co., 845 Ottawa, N.W., Grand Rapids, Mich. Growers Exchange, Inc., P. O. Box 397, Farmington, Mich. Strickland Seed Store, 1429 Gratiot Ave., Detroit, Mich.
RHODE ISLAND	American-Dutch Trading Co., Inc., 47 Coddling St., Providence, R. I.
CANADA	The Sheridan Nurseries, Ltd., Sheridan, Ontario, Canada.

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have been made in about two dozen. Similar results were obtained with N. C. 6-15 plants.

It should be possible to cross fertile tetraploid hybrids of diverse chromosomal make-up and bring about the segregation of characters needed. Developing the potentialities calls for widespread research effort.

LANDSCAPE TREES

[Continued from page 13]

the two, saying that L. vossi makes the better specimen, since it is denser in growth habit. The Waterer laburnum is the result of crossing Laburnum alpinum and Laburnum anagyroides (vulgare), and supposedly L. vossi was achieved the same way. They are probably similar in most instances in this country.

The Scotch laburnum goes back to colonial times and was probably introduced then, while the Waterer laburnum did not make its entry until about the time of the Civil war. The catalog of the Prince Nurseries, Flushing, L. I., N. Y., dated 1790

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Model B



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listed Laburnum anagyroides (golden chain laburnum) along with such other plants as golden-rain tree, koeleruteria; smoke tree, Cotinus coggygia; rose of Sharon, Hibiscus syriacus; Lombardy poplar, and common snowball, Viburnum opulus sterile.

Most persons have probably not taken the time to examine the buds of the laburnums during the winter. They would have found them covered with silvery-haired scales that make them conspicuous in contrast with the green stems.

Transplant in Spring

Laburnums should be transplanted in the spring for the best results. One reason is that they need a growing season to establish themselves and may suffer from late winter and early spring drying. This is particularly true when the plants are exposed to strong winds.

Their uses are many, but one that seems to be effective is a place in the garden where they have the company of flowers. There is something harmonious about the combination. Light shade is no problem, but problems are created where there are low overhanging branches. Neither will the plants take the competition of such strong feeders as yews for any period of time. Soil does not seem to be a serious consideration, if good drainage is provided, but watering is necessary during a dry period.

The laburnum variations seem to be absent in the nursery trade, probably because of the lack of knowledge about them, and the lack of

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an available source of stock. Some of the varieties of Laburnum anagyroides are L. anagyroides sessilifolium (with very short petioles causing a bunched effect), bullatum (curled leaves), aureum (gold leaves), quercifolium (oaklike leaves), pendulum (a weeping form) and autumnale (having some fall color). The Scotch laburnum has two variations, pendulum (weeping) and autumnale (having fall color).

Whether the laburnums are Scotch, Waterer or common, they are worthy of being considered for planting. They are effective near doorways, in small flower courts in the garden and in many other places that may need a spark of something different.

K & T NURSERY, 17518 South Wilton place, Torrance, Calif., was recently opened by Tamio Katata.

CONSTRUCTION of a new research office building and other facilities in the center of their vine seed growing region near Gridley, Calif., has been announced by Lawrence Robinson & Sons, nationally known vine seed specialists of Modesto, Calif. The construction is part of a long-range plan to move research and plant-breeding operations from the Modesto headquarters.

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Selected Ground Cover Plants for New England

By Seth L. Kelsey

Grass is the finest of all ground covers and the only one that will stand up under any considerable degree of traffic. Other ground covers must be used, however, where special effects are desired or where maintenance of grass becomes too difficult or expensive, as it does in shady areas or on steep slopes. This discussion of ground covers will be limited to those plants that can be used to provide a more or less solid cover for the ground and that can be maintained at heights not exceeding two feet.

There are many uses for ground covers in landscaping. Their substitution for grass in difficult places has already been mentioned. They may also be used effectively to permit wider spacing of the larger plants in the landscape.

Ground covers preserve moisture, keep the soil friable and help to keep the roots of the larger plants cooler. To use ground covers for this purpose is to follow the teachings of nature, where bare ground is found only under extreme desert or arctic conditions or where solid rock makes vegetation impossible. Elsewhere one always finds some sort of ground cover, even if only of leaves or pine needles.

Many spring bulbs will actually do better interplanted with selected ground covers. In this way all-season attractiveness can be provided in areas where bulbs are used.

Ground covers add interest and variety to the landscape, furnishing added contrasts in size, habit of growth and texture. Many of them, especially those spreading by underground roots or stolons, can be used on steep banks and slopes to protect against erosion and at the same time make such areas attractive parts of the landscape picture.

In sterile and rocky areas, where complete rebuilding of new topsoil would be expensive, some of the more rampant ground covers can be planted in carefully prepared but widely spaced planting pockets, thereby providing an attractive and

Address, "Ground Cover Plants," delivered by Seth L. Kelsey, vice-president, Kelsey-Highlands Nursery, East Boxford, Mass., at the short course for nurserymen held at the Waltham field station, Waltham, Mass., early this year.

permanent cover at lowest possible cost.

For reduced maintenance of large areas, especially in the functional planting of highways, parks and other public places, ground covers are excellent. Careful studies have shown that, while grassing these areas may be less expensive initially, the use of ground covers results in tremendous savings in maintenance costs, making the eventual cost to the taxpayer or owner much lower.

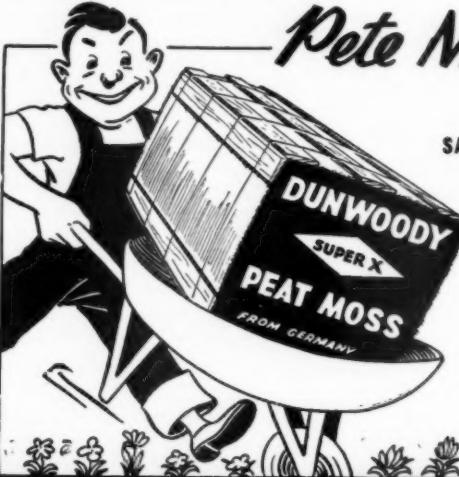
Ground covers also simplify weed

control in the home landscape. Bare ground is an invitation to weeds. Carefully selected ground covers, when well established, will largely prevent the germination of the weed seeds that are almost always present, but which need sun to germinate.

Apart from their usefulness, the intrinsic beauty of the ground covers recommends them—their flowers, foliage, fruit, autumn color, texture or a combination of two or more of these qualities. Such beautiful but unobtrusive features may not appeal to those who admire only huge flowers or brilliant colors. The more discriminating gardener, however, will find in the ground covers a wealth of more detailed beauty to enjoy.

For New England

Any selection of better plant varieties is necessarily a matter of opin-



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ion. It is safe to say, however, that among the plants here listed as the better varieties for New England can be found kinds that will serve almost every ground cover purpose, and most of them are useful in other parts of the country as well. Soil acidity and alkalinity, while they must sometimes be considered, do not seem so important with most ground covers as do the organic content and food resources of the soil. Most of these plants are tolerant in their likes and dislikes.

In the list presented here, starred varieties indicate those plants especially recommended for their exceptional beauty or all-around usefulness, and letters are used after each common name to indicate the following characteristics: P—prostrate or trailing; S—less than one foot tall; M—one to two feet tall; Su—for sunny locations; Sh—for shady locations; A—doing well in acid soils, and L—doing well in limestone soils.

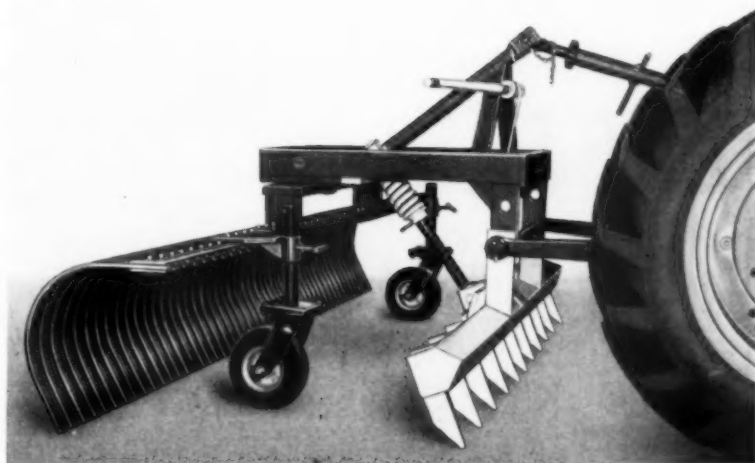
Only a limited number of evergreens can be considered as generally useful as ground covers. Undoubtedly the future will bring more evergreens for this purpose in low or prostrate forms of taxus, tsuga, picea and others. Careful selection of the best low forms of *Pinus mugo mughus* offers great promise.

Evergreens

Among the evergreens currently available, *Juniperus chinensis sargentii** (P-Su-A) is an excellent ground cover, with steel-blue foliage making a solid mat. It is fine for the seashore and does well even in partial shade. *Juniperus conferta*, shore juniper (P-Su-A), does well in poor soils, even thriving on sand dunes near the ocean. *Juniperus horizontalis**, creeping juniper (P-Su-A), is native from Nova Scotia to New Jersey. The type has bright green foliage. There are many good varieties, among which the following are best known: *Douglasi*, with trailing steel-blue foliage; *glauca*, with blue foliage, not quite so prostrate as the preceding; *plumosa*, with feathery, light green foliage that is purplish in winter, taller growing than the others, and procumbens, most dwarfed of all. *Juniperus sabina tamariscifolia*, *Tamarix juniper* (M-Su-A-L), has light green foliage and ascending branches. It is one of the few junipers that do well on limestone soils, but it is susceptible to red spider.

Pinus mugo pumilio, shrubby Swiss mountain pine (S to M-Su), is the lowest form of mugo pine; scale can be a nuisance on this. *Taxus canadensis*, Canada yew (M-Sh-A), is useful

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in shady or semishady woodsy areas in northern New England. It is best when sheared every second or third year. *Taxus baccata procumbens*, prostrate English yew (M-Su-Sh-A-L), is the lowest of the English yews, with dark green foliage. It is not reliably hardy in northern New England.

Broad-Leaved Evergreens

Many of the most useful and beautiful ground covers are found among the broad-leaved evergreens. *Arctostaphylos uva-ursi**, bearberry (P-Su-Sh-A), is a fine and trailing plant with pink flowers in June and red berries in July and October. It has a red autumn color when placed in the sun. Growing well only in poor soils, it is excellent for the seashore. Only pot-grown plants should be used.

Calluna vulgaris, Scotch heather (S to M-Su-A), has more than 50 hardy varieties known. It does well in light soils and is helped by occasional pruning in early spring. Partial shade seems helpful in some locations.

Cotoneaster adpressa, creeping cotoneaster (M-Su), has an interesting, irregular growth and the largest red berries of the low varieties. *Cotoneaster dammeri*, bearberry cotoneaster (P-Su) is a fine trailing species from central China. Its white flowers are followed by bright red berries in fall. *Cotoneaster horizontalis**, rock cotoneaster (M-Su), is an excellent ground cover, with flat horizontal branches, pink flowers in June, red berries and reddish autumn color. *Cotoneaster microphylla*, rock-spray cotoneaster (M-Su), has the smallest leaves of all, arching branches, white flowers and red berries. It is fine for use on a ledge or slope.

Cytisus albus, Portuguese broom (S-Su), grows only 12 inches tall and is the only hardy white-flowering broom. *Cytisus kewensis*, Kew broom (S-Su), is the lowest broom, making a mat five to six inches across and only six inches high, with sulphur-yellow flowers in May. It is probably not reliably hardy except on Cape Cod and in coastal Connecticut and Rhode Island. *Cytisus purpureus*, purple broom (M-Su), grows about 18 inches tall. Its purple flowers are beautiful in mass plantings.

Daphne cneorum, rose daphne (S-Su-A-L), bears fragrant pink flowers in spring and again in fall. It prefers a cool, moist, well-drained soil and may be temperamental, doing well for some and poorly for others. It should be pruned heavily if it becomes leggy. *Erica carnea*, spring heath (S-Su-A), is useful in limited



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areas, with bright green needlelike foliage and rosy-red flowers in earliest spring.

Euonymus fortunei, winter creeper *euonymus* (M-Su-Sh), is not so desirable a ground cover as some of the varieties. All *euonymus* are rich feeders and all are subject to scale. The following varieties are perhaps the most useful as ground covers: *Carrierei*, glossy winter creeper *euonymus*, one of the best fruiting forms, with shiny leaves; *coloratus**, purple-leaved winter creeper, a fine stem-rooting variety, with purple-red foliage in fall and winter; *mini-mus*, baby winter creeper, and *kewensis*, Kew winter creeper, both tiny-leaved forms, compact and slow growing; *radicans**, common winter creeper, one of the best for general use, and *vegetus*, big-leaved winter creeper, which is coarser, with thick, round leaves. The last-named variety is a good fruiting form, but its tendency to be shrubbier than is desirable in a ground cover makes it useful only in larger areas.

*Galax aphylla**, *galax* (S-Su-Sh-A), is an evergreen herb with slender white flower spikes in May and heart-shaped foliage that turns red in fall and winter in sunny locations. It is excellent for use with *rhododendrons* and *azaleas*. *Gaultheria procumbens*, wintergreen (P-Su-Sh-A), with its white flowers, red fruit and aromatic foliage, is adapted to naturalized or woodland plantings and must not be allowed to become dry. *Gaylussacia brachycera**, box huckleberry (S-Su-Sh-A), is a rare native species, whose white or pink flowers are supplanted by blue fruit in August.

*Hedera helix**, English ivy (P-Sh), is one of the best ground covers, requiring rich, moist soil and at least partial shade for best results. There are many varieties, one of the most useful in New England being *H. h. baltica*, Baltic ivy, which is hardier than the species and has smaller leaves.

Helianthemum nummularium, sun rose (S-Su-L), has leaves with a silvery reverse and yellow, pink, white or red flowers in the more than 50 varieties known. It prefers a limestone soil in full sun and requires a cover of evergreen boughs for protection in the late winter months.

Iberis sempervirens, evergreen candytuft (S-Su), produces white, flat flower clusters above a dense mat of evergreen foliage. Useful in full sun where it will not dry out, this species is better as a ground cover than its many dwarf varieties. *Mahonia repens*, creeping mahonia (S-Su-Sh), has yellow flowers in May, dull, blue-

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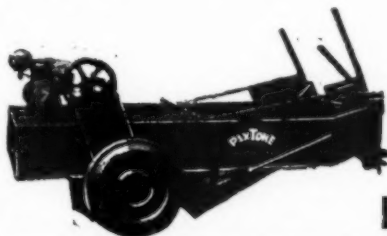
Wishing you and your organization a very happy and prosperous New Year and thanking you for all past cooperation.

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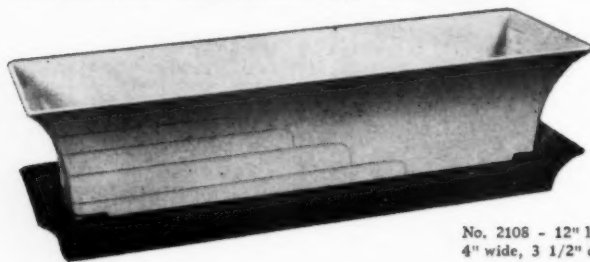


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ish-green foliage and black, grapelike fruit. Spreading by underground roots, it is characterized by vigorous growth and a stature much lower than that of *Mahonia aquifolium*. *Mitchella repens*, partridgeberry (P. Sh-A), in partial shade and in moist, acid soil, makes a delightful evergreen mat with white flowers and red berries. It is best used in the wild garden or in open woodlands.

*Pachistima canbyi**, *Canby pachistima* (S-Su-Sh), is a most useful plant, with tiny evergreen leaves that turn bronze in the winter. It spreads by underground stolons. *Pachysandra terminalis**, *Japanese pachysandra* (S-Su-Sh), is perhaps the commonest ground cover for shady places, where it makes a solid, uniform cover. It also does well in sun if the soil is rich and moist, with a high humus content.

Potentilla tridentata, wine-leaved cinquefoil (P-Su-A), one of the few ground covers to thrive in dry soil in full sun, produces white flowers in May and has a wine-red autumn color.

*Shortia galacifolia**, *oconeebells* (S-Sh-A), is a gem for rich, moist soils in shady locations, where its nodding, white, bell-shaped flowers appear in earliest spring. Its shiny green leaves are tinged with bronze. *Teucrium chamaedrys*, *chamaedrys germander* (S-Su), with rose-colored flowers in summer and small, glossy, dark green leaves, is improved by an occasional shearing.

*Vaccinium vitis-idaea majus**, *shore cowberry* (S-Su-Sh-A), blooms in May, and its white or pink flowers are followed by red fruit that persists from August to October. It forms a dense cover rarely over eight inches tall and is excellent for use on the seashore. *Vaccinium vitis-idaea minus*, *mountain cowberry* (S-Su-Sh-A), is smaller in scale than the shore cowberry and bears flowers of a deeper color and dark red fruit. It is extremely hardy, being native on the highest New England mountaintops.

*Vinca minor**, *common periwinkle* (P-Sh-Su), is a standard ground cover, with lilac-blue flowers in April and trailing stems that root readily. It is fine for holding steep slopes and for planting with bulbs. There are several varieties, among which are *alba*, not so vigorous, with white flowers that provide a fine contrast when interplanted among other varieties; *atropurpurea*, with purple flowers; *Bowles' variety**, a strong grower with light blue flowers, but clumpy in growth and therefore not spreading so rapidly to cover large

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areas, and multiplex, with double purple flowers.

Only a few deciduous shrubs are useful as ground covers. The following have some merit under certain conditions:

Azalea obtusa, Hiryu azalea (M-Su-Sh-A), is, strangely, unknown in the trade. Extremely compact, slow growing and making an irregular, compact mass rarely over two feet tall, it has rosy-purple flowers and foliage that is almost evergreen.

Chaenomeles japonica alpina, Alpine Japanese flowering quince (M-Su-Sh-A-I), has single orange flowers on a dense, low shrub. Best results are obtained in full sun, in almost any good soil. It is the lowest of all the chaenomeles, rarely exceeding 12 inches in height. Cornus stolonifera kelseyi, Kelsey dwarf dogwood (M-Su-Sh), is an excellent ground cover rarely exceeding two feet in height. Its dark red stems give an interesting winter effect.

Forsythia Arnold Dwarf (M-Su-Sh) is a new introduction that might well be considered for large areas and slopes. It is extremely dense, with an irregular shape and stems that root where they touch moist soil.

Hypericum buckleyi, Blue Ridge St.-John's-wort (S-Su-A), is almost

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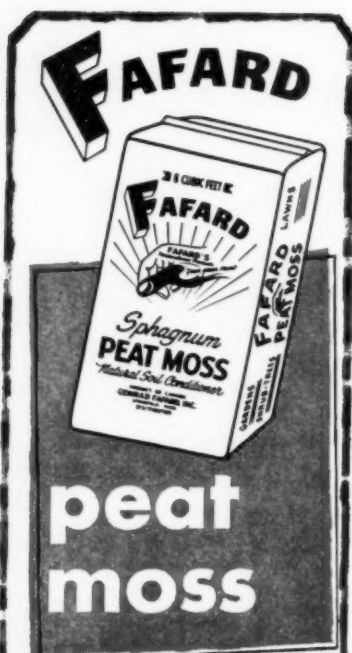
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a creeping plant, rarely over 10 inches tall, with yellow flowers in June. It develops to a round mat several feet across. Hypericum calycinum, Aaron's-beard St.-John's-wort (S-Su-Sh-A), is good for sandy soil in semishade. This species is half-evergreen and has yellow flowers most of the summer.

Indigofera incarnata alba, white Chinese indigo (M-Su), has attractive white pealike flowers on a dense low shrub. As with the following species, even if the tops are winter-killed, the plant will sprout and flower on the current year's growth. Both spread by underground stems. Indigofera kirilowi, Kirilow indigo (M-Su-Sh), is a little taller than the preceding and has rose-colored flowers. It is fine for steep slopes, with a vigorous suckering habit.

Vaccinium angustifolium laevigatum, low-bush blueberry (S-Su-Sh-A), is for broad naturalistic plantings and is also fine for highway planting on large slopes. Its use in the small home landscape is limited. Xanthorhiza simplicissima, yellow-root (M-Su-Sh-A), is also for large areas, making a dense mass of finely cut foliage and doing well in moist soil in sun or shade.

Vines

Many vines are useful as ground covers for large areas, for rough, uneven land or in pockets when soil conditions are poor. The following are among the best.

Akebia quinata, 5-leaved akebia (Su-Sh). A rampant grower for open woods or large slopes, this is not a neat plant, hence not for limited areas or where it will smother more desirable growth.

Celastrus, bittersweet, in variety (Su-Sh), is for large areas and slopes, especially near the seashore. There are several good varieties: Flagellaris, Korean bittersweet, the only thorny variety; orbiculata, Oriental bittersweet, a rampant grower, with yellow and red fruit; orbiculata punctata, Christmas bittersweet, similar but with orange and scarlet fruit, and scandens, American bittersweet, a vigorous and possessive vine, especially good near the seashore.

Euonymus obovata*, running euonymus (Su-Sh). This hardy deciduous euonymus spreads rapidly. Scarlet berries add to the brilliant red autumn color.

Hydrangea petiolaris, climbing hydrangea (Su-Sh), is good for large areas, especially open woodlands. Lustrous leaves accompany showy white flowers in June.

Lonicera henryi*, Henry honey-

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suckle, is similar to, but hardier than, Hall's honeysuckle and is therefore better to use in the northern parts of New England. Flowers are purple or yellowish-red, with fruit black.

*Lonicera japonica halliana**, Hall's honeysuckle (Su-Sh), is a standard ground cover for large areas, especially steep slopes. It has trumpet-shaped white or yellowish flowers and black fruit. This and the preceding subject should never be used where they have opportunity to climb over other plants.

Lycium halimifolium, matrimony vine (Su-Sh), is a coarse, woody vine useful for erosion control of large areas, where an attractive appearance is not important.

Parthenocissus quinquefolia, Virginia creeper (Su-Sh), is fine for open woodlands and has brilliant red autumn color.

Rosa Max Graf (Su) makes an excellent choice for bank or slope planting, with showy single bright pink flowers in June.

Rosa wichuraiana, memorial rose (Su), shows single white flowers in clusters and is probably the best rose as a ground cover. The fast-growing shoots root readily and help to stop soil erosion.

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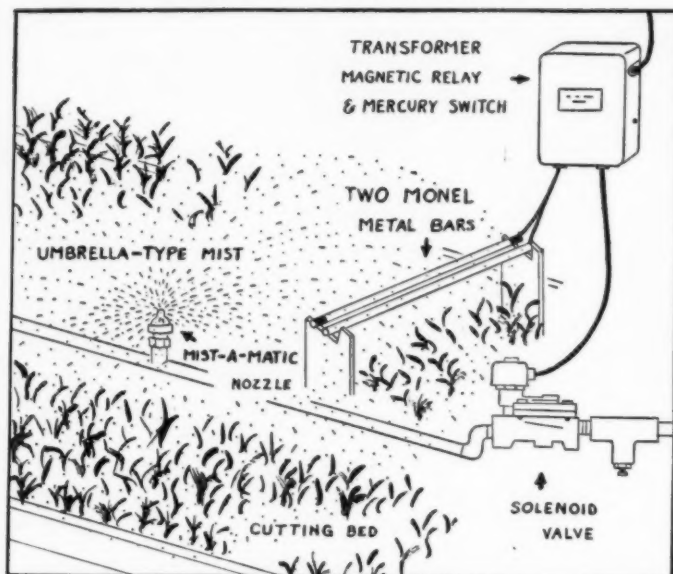
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perennials make useful ground covers. There are so many varieties that even to list them without descriptions would take too much space. Among the genera most frequently used for this purpose are the following: Ajuga, alyssum, arabis, arenaria, armeria, artemisia (dwarf varieties), asarum, campanula (dwarf varieties), dianthus, dicentra, epimedium, gypsophila (dwarf varieties), hosta, houstonia, iberis, iris (dwarf varieties), mentha, nepeta, phlox (dwarf varieties), polemonium, sedum, thymus, veronica (dwarf varieties) and viola.

Among the outstanding species are the following:

Ajuga reptans*, carpet bugle, grows in sun or shade, in almost any kind of soil. This virtually evergreen perennial is one of the most dependable of all ground covers, having green leaves and blue flowers in May. There are many good varieties, including alba, green foliage and white flowers; rubra, bronze-red foliage and deep purple flowers, and tottenhami, bronze-red foliage and blue flowers.

Dicentra eximia*, fringed bleeding heart, grows in sun or shade in any good humus-rich soil. This splendid plant provides a solid ground cover of finely cut leaves, with rosy-purple flowers over a long period. Especially noteworthy is the variety alba*, with flowers pale pink when young and white when mature.

Houstonia serpyllifolia*, creeping bluets, is an extraordinary native species from the southern highlands, making a solid mound of tiny evergreen leaves smothered with small blue flowers in spring. Wherever moist soil rich in humus can be provided, this plant will give noteworthy results.

Epimedium macranthum*, long-spurred epimedium, with its varieties niveum, roseum and violaceum, makes a fine ground cover, especially in semishade. The flowers are white, pink or purple. Other species have yellow flowers. The plant spreads by underground rootstocks.

Veronica repens*, creeping speedwell, forms a neat prostrate mat, with rose or bluish flowers in May.

For Special Uses

Ferns supply some excellent ground covers for specialized use in the naturalistic garden and as an underplanting, especially with rhododendrons and azaleas. Most ferns enjoy partial shade; some are only inches high, while others grow to three feet or more.

Annuals offer a wide range of size, form and color, and the plantsman

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will wish to choose those best suited to his individual purpose.

Profitable Items

Contrary to general belief, properly spaced ground covers often bring greater return to the landscape man than the average shrub occupying the same area. For example: Assuming *Kalmia latifolia* plants should be planted at least four feet apart, the following comparison can be made: 1 *Kalmia latifolia*, 2 to 2½-foot, \$9.50, or 60 cents per square foot; 4 *Pachysandra terminalis*, 22 cents each, or 88 cents per square foot; 1 *Pachistima canbyi*, six to nine inches, 90 cents each, or 90 cents per square foot; 1 *Vinca minor*, Bowles' variety, 50 cents each, or 50 cents per square foot; 1 *Ajuga reptans*, 45 cents each, or 45 cents per square foot.

Thus the average of four typical ground covers brings about 68 cents per square foot, in comparison with 60 cents from the *kalmia*. However, use of the ground cover with the *kalmia* allows for spacing the larger plants five and a half feet apart, in which case, the return from the *kalmia* becomes about 31½ cents per square foot, which, added to the average ground cover figure, brings the total return to about \$1 per square foot. This gives a better spaced and more permanently satisfactory effect. The customer is better pleased, and the nurseryman has made a better sale.

Ground cover plants take less space in the nursery for each dollar in sales. Ground covers are usually sold in large numbers. They are easily and inexpensively dug, handled and planted on the job. Most ground covers are easy to propagate and can be grown to salable size in two years or less.

Summary

Ground covers are useful plants that not only help to create a more beautiful landscape, but assist in weed control, erosion prevention and reduction of maintenance costs. They are beneficial to the larger plants in the landscape.

A wide selection of ground cover plants is available for different effects and purposes, with the broad-leaved evergreens most generally useful.

Ground cover plants are not only profitable nursery items in themselves, but allow better spacing of the larger specimens in the landscape, while at the same time they bring a greater return for any area in which they are used.

The plants are desirable in landscaping the so-called contemporary home, where the use of larger plants



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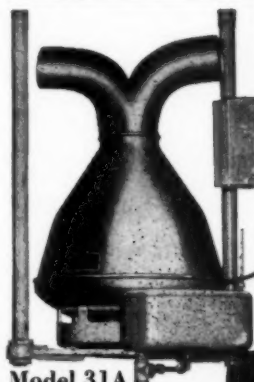
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is limited and where broad areas can be effectively planted with carefully selected ground covers.

Increased public interest in this group of plants is being stimulated by books, articles and lectures, as well as by a limited number of nurserymen who are beginning to realize the importance of ground covers for the purposes outlined here.

It seems almost certain that the future will bring wider use of these plants, with benefits to nurserymen and consumers alike.

OHIO SUMMER MEETING

[Continued from page 69]

executive meeting Tuesday afternoon, it was decided that the 1959 summer meeting will be held in Lake county, Ohio.

Dinner was at 6:30 p. m. Roast chicken and corn on the cob were served. Group singing, entertainment and an unusual dialogue about historical events and places around Sandusky composed the program for the evening.

Wednesday Outing

Wednesday, August 13, was a day of recreation and enjoyment at the famous Cedar Point on Lake Erie. Fishing, golfing, horseshoe pitching and visiting filled the morning hours. An old-fashioned wiener roast was enjoyed at noon. During the afternoon many families took advantage of the fine weather and an excellent beach for a swim in Lake Erie. After a roast beef dinner, the evening was spent seeing the midway sights at Cedar Point and dancing.

The weather was ideal for the boat trip to Put in Bay Thursday, August 14. The group was taken by car for a tour of South Bass island. After an excellent fish dinner at Coopers restaurant, everyone was free to visit the various points of interest, including Crystal cave, Perry's Memorial cave, Perry's Victory and International Peace Memorial national monument, the government lighthouse, the Ohio State University biological laboratory and the old wineries on the islands. Many nurserymen visited several of the nurseries in the Sandusky area before returning home.

OAK TWIG GRUB

Signs of depredations by the oak twig grub may be seen in a littering of small twigs under oak trees in late summer, according to Neely Turner, of the Connecticut agricultural experiment station, New Haven. The twigs on the ground will have the appearance of having been sev-

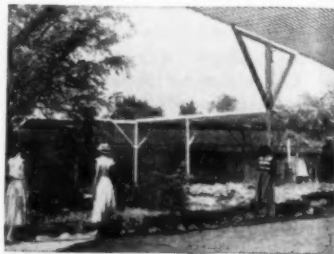
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ered by a knifelike cut; others in the tree will hang with withered leaves until wind finally breaks them off.

The severed twigs — the loss usually causes no real injury to the tree — serve as one of nature's unusual conveyances. Grubs of the oak twig pruner have worked for a time under the bark, then tunneled along the pith in the center of the twig. When nearly full-grown, the borer neatly cuts away most of the woody tissue, taking pains to stay in the section soon to be snapped from the tree by wind. Thus the borer cuts off his twig home, drops to the ground within it and settles down for a restful winter. In spring the beetle emerges, ready to take off in July and August to lay eggs on twigs, and so on forever.

Householders who like to have a clean lawn can interrupt this cycle by burning the twigs after they have been picked up. Enough twig borers are working where twigs will not be gathered, however, to assure the future of the species.

Presumably sprays of DDT or malathion in late spring or early summer would reduce the infestation on an individual tree, but the pest is seldom so bothersome that sprays are warranted.

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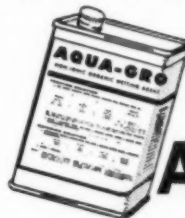
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Good Public Relations Important for Arborists

By Noel B. Wyson

There are about as many different definitions of public relations as there are speakers on the subject. But, reduced to its simplest terms, public relations is what people think of us as a result of our own conduct.

The public includes every person with whom we have any manner of contact. The public is the man we meet on the street; it is our employees and those with whom we work; it is those who read what we write or listen to what we say; it is our friends, neighbors and even the members of our own family. We have relations of one kind or another with all these people and on each one we make some sort of impression.

That impression can be favorable or unfavorable depending upon our conduct; that collective impression is public relations and it can be good or bad. Public relations is a thing formed by our way of life and it is not confined to the eight or 10 hours we spend daily in conducting our business affairs. If we want to have good public relations we must work at it during every hour we are awake.

There is no question that good public relations is valued in business organizations. Many industries give all their employees training in public relations. Public relations constitutes a considerable part of the work of personnel officers in large industrial firms. Influenced by the popularity of conservation, a big lumber-producing company now advertises that its lands are managed in accordance with approved forestry practices, in order that the natural resources represented in trees and forests will be perpetuated.

An oil company advises the public that "Service is our Business"; a big corporation states on its TV program that "Good will is our greatest asset." Look at almost any advertisement and you will see that a play is made for public good will. Big business believes in promoting good public relations and spends vast sums each year to do so.

Promotion of good public relations

An address, "Public Relations," presented by Noel B. Wyson, chief forester, Cook county forest preserve district, River Forest, Ill., at the short course held early this year by the Indiana Arborists' Association at Purdue University, Lafayette, Ind.

is as essential to success in arboriculture as it is in any other business. And the fostering of good public relations must begin at home—with the employees. Your employees, as they prune trees, spray or perform any other work your organization undertakes, will meet your clients fully as much as you do—perhaps even more so, for homeowners often have occasion to talk to the men who are doing the work. Your employees will talk, also, to their friends and neighbors about their work. How they feel toward your organization and toward you as their boss will be reflected in what they say.

Employee's Attitude Important

If your man is happy and satisfied in his job, it will show in his conversation. He will leave his listener feeling that you must be a pretty good fellow—one worth giving a job to if the opportunity presents itself.

But if your man is unhappy in his job, he certainly is not going to praise you or your organization. It pays to keep your men happy. They can create or destroy good will.

An expert on employer-employee relationships has offered the following suggestions for keeping workmen contented and happy in their jobs:

"1. The worker must be able to have pride in the organization and in his job. He must believe in the worthwhileness of the general objective of the company.

"2. He must feel that his efforts are appreciated. Appreciation is usually expressed in terms of a fair and adequate salary or wage, but the worker needs more than this. He needs also the feeling that his supervisor and the management are thoroughly familiar with his job and realize the difficulty and the importance of what he is doing, and that they do not in any way look down on him or his job.

"3. He must never be required to do anything which might rob him of his self respect.

"4. He must not only respect the ability of his supervisor, but must be able to like him personally.

"5. He must have a feeling of rea-

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Roots screened out
You get the
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sonable security in his job, knowing that he is not going to be dismissed or transferred on some slight whim.

"6. He must find some opportunity for self-expression in his work.

"7. He must feel that he has an opportunity for advancement and that promotions will be made on the basis of merit only."

Further Suggestions

To this already rather lengthy list of suggestions I should like to add a few which are based on personal experience.

1. Never show partiality to any employee.

2. Never "bawl out" a man in front of his fellow workmen, and do not do it while you are angry. When you do reprimand him, make sure he understands why you feel he deserves it.

3. Be understanding and sympathetic with employees' personal problems.

4. Make yourself easily available for full discussion of any problem an employee feels is important enough to bring to your attention. You may not be able to do anything to remedy matters, but just giving an employee your courteous attention will make him feel better toward you and your organization.

5. Be friendly to all employees, but do not allow yourself to become involved in a situation where you are subject to just criticism. For example, do not play cards for money with your employees. Keep their respect.

6. Do not make unnecessary rules. When you feel that a rule must be made, make it in writing and see to it that it is obeyed.

7. Be properly enthusiastic about arboriculture as a vocation. If there are times when you feel that other fields are greener, do not let your employees know it. Enthusiasm is catching; so is lack of enthusiasm.

8. When you issue orders, make them clear and understandable—in writing, when it is practicable.

9. In all contacts with your employees, be courteous. Discourtesy is a breeder of discontent and dislike.

10. Be fair and firm in dealing with your employees. If you are in doubt as to how to handle a situation, take time to think it over before making your decision.

11. Give your workmen in-service training, preferably in meetings held once a month. Make these meetings truly instructive and interesting, and you will find that the men will do a better job for you.

No doubt you can think of many

The Sherman Line of Soil Working Tools



SHERMAN-GANNON LANDSCAPER • Inset shows lock to keep teeth from vibrating loose.



SHERMAN-GILL MULTI-PURPOSE TOOL • Inset shows scarifier teeth and rollers with pins.

SHERMAN-GANNON LANDSCAPER

Features: Lever controlled from tractor seat enables operator to scrape and scarify at same time, or grade, level and backfill independently • Flat sides permit working close to obstructions • Unique curve of Maximold Moldboard and large side plates mean moving more dirt than any similar equipment • Hinged back gate allows front blade to penetrate for grading, but can be locked for levelling and fine grading; front blade acts as shoe to keep rear blade from penetrating too deeply when backfilling • Scarifier teeth are adjustable for chipping or deep scarifying • Patented lock holds teeth so they cannot vibrate loose but can be removed by tripping lock • Replaceable cutting blades of spring steel, reversible for added life.

SHERMAN-GILL MULTI-PURPOSE TOOL

Features: Prepares seedbeds after rough grading, eliminating expensive hand labor and the need for plowing and discing, and releasing five to ten men for other work • Exclusive "floating" design permits own weight to penetrate soil • Position control for ordinary or clay soil and draft control for fast finish grading in loamy or sandy soil • 33 scarifier teeth, eight in. long, scarify three and one-half in. deep every two in. • "H" beam design with front flange serving as rough grader and rear flange as finish leveller • 110 pins in each roller penetrate soil one in. • Three point hook-up for fast mounting and dismounting • Performs six different operations: scarifies, grades, levels, breaks clods, pulverizes, rolls and firms.

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EASILY INSTALLED
IT WILL NOT RUST

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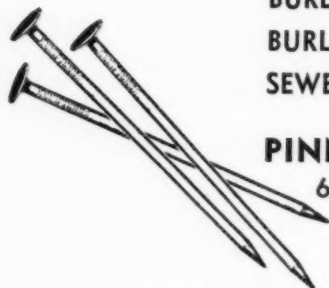
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Send your catalog and wholesale prices.

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other things you can do to help make your employees contented in their jobs. Do them—it will create good will in a section of your public that can help improve your relations with the general public.

Forming Clients' Opinions

In addition to your employees, another target at which you will aim your public relations program is the people who supply you with work, your clients and prospective clients. These people will form their opinion of you through your advertising and publicity material, your telephone conversations, your letters, the conduct of your workmen, the appearance of your equipment, personal contacts and, finally, through the quality of your work. Since first impressions often determine attitudes and opinions for years to come, it pays to make that first impression count in your favor.

Means by which you may publicize your organization include telephone directory advertisements; newspaper advertisements and articles; printed cards, folders and pamphlets; radio and television advertisements; speaking engagements; movies and slides, and displays at garden and flower shows.

Become acquainted and sincerely friendly with the editors and reporters of your local newspapers. They are always looking for stories that have human interest or are otherwise newsworthy. You have frequent opportunities to supply such stories. Moving a big tree on the grounds of a public building; taking down or pruning a tree that has a historical background in your community; Arbor day planting programs; the first spring flowers; signs of autumn—all such items constitute news that will be printed, usually with pictures and names. Make a friend of the editor, give him stories he can use, and you will be surprised how often your name and that of your company will appear in his paper. But do not try to persuade him to print a story that serves no purpose except to publicize you or your organization.

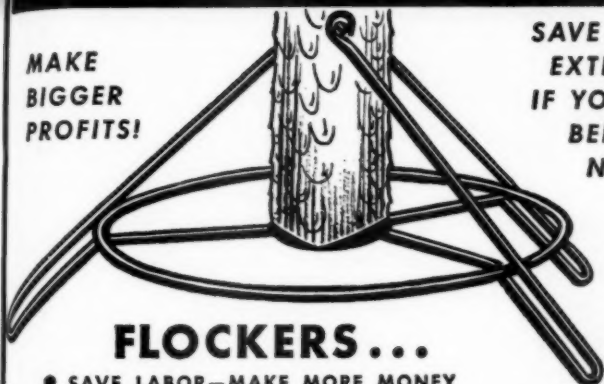
The advertising and publicity material you distribute should be attractive in make-up, factual in content and so worded that it can be understood by laymen. Do not exaggerate; do not make statements you cannot substantiate.

Do not pass up opportunities to speak at meetings of garden clubs, schools and other groups. You can be sure the program chairman would not ask you unless he and his group wanted you. You may not get a dime

NEW, IMPROVED, STRONGER DESIGNED

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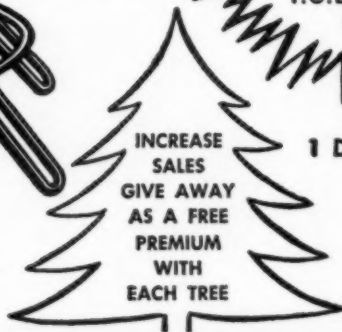
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FLOCKERS...

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PRODUCTS, ADDISON, ILL.

out of it directly, but you will be making friends and establishing good public relations.

When you answer the telephone, do not growl into it; be friendly, put a smile in your voice. Avoid speaking in such a clipped, hurried tone that the caller gets the impression he is taking you away from some vitally important job. There are many different inflections with which you can say "Hello," or "Jones Tree Service." Say it in the most courteous, friendly way you can. Remember, your caller may be a stranger wanting to give you a \$1,000 job; if your tone of voice displeases him, he will look elsewhere.

It is simple courtesy, of course, to answer correspondence as promptly as possible. But that is not enough. Projecting your own friendly personality into the letters you write is an art you should strive to master. A good rule to follow is this: Imagine the person to whom you are writing is sitting across the desk from you, and you are talking to him. Write then as you would talk. Use good grammar, of course, but avoid big words or long sentences. And use a typewriter in all business correspondence.

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Just spray it on!

LOW-COST RAYON FLOCK, PURE BLUE-WHITE

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ROOTONE

**Now contains naphthylacetic acid plus
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**gives even surer strike... better insurance
for rooting cuttings**

Now this widely used product—long a trusted standby of nurserymen everywhere—is even better, quicker, surer in its results than ever. That's because *indole butyric acid* has been added to an already successful formula.

Now you can root with confidence an even wider range of cuttings, knowing they'll put out strong, healthy roots faster and surer than ever. For assured results, get Rootone today. Rootone F, containing a fungicide, is also obtainable if desired.

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2-oz. jar \$1.25
1-lb. canister \$5.00

pective client is going to see your men at work and judge you by their conduct, their appearance and that of the equipment they are using. Shouted conversations often spiced with a bit of profanity; remarks directed to, or concerning, passers-by; men with a day's stubble of beard; slovenly clothing; dirty trucks—these things can eliminate you from consideration for a job. Teach your men to behave as gentlemen should, see to it that they are properly dressed for their work and keep your equipment clean.

Effect of Personal Contacts

Now let us consider the promotion of good public relations through personal contacts. We meet people every day—we meet them in our own office, in their offices, in their homes and on the street. To some degree, every meeting affects public relations. Following are some suggestions for making such meetings count in your favor.

1. Be careful of your personal appearance. Take time to shave every day and dress neatly. Your clothing does not have to be expensive but it should be clean and neat.

2. A stranger coming into your office may form his opinion of you from its appearance. Keep your desk from becoming littered with useless papers. Keep your office clean and orderly. Keep an extra chair for visitors—they like to sit down, too.

3. In talking with a person, meet him on his own level. For example, if the person is a physician you can use technical terms in describing a tree disease and he will understand you perfectly. But if you are talking to a merchant or a housewife, use words they can understand.

4. Be genuinely interested in people, their work and their hobbies. If you can talk with your client intelligently about his hobby, it establishes a bond with him and you rise in his estimation.

5. When you make appointments, keep them and be there on time. If for any reason you are forced to be late, call the person and explain the circumstances. Recognize the fact that every person's time is valuable.

6. Try to remember the names of the people you meet. It is flattering to a person's ego—good public relations—when you can call him by name as you greet him.

7. When you introduce yourself to a new client or a prospective client, hand him your business card. He may not be good at remembering names.

8. When you attempt to diagnose tree troubles, there are certain items

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of equipment you can use to advantage. With a hand lens you can show your client the red spiders you find; an increment borer will help you determine whether or not a tree is hollow; you can check soil conditions with a soil augur, and its acidity with a soil-testing kit; with a pole pruner you can clip a high branch for examination. Use of such instruments will indicate to the client that you are doing something more than just guessing at the trouble.

9. When you discuss charges for contemplated work with a client, state your terms clearly and be sure he understands exactly the figures you quote. When you present your bill for payment, you certainly do not want him to feel he has been overcharged.

10. Render bills as soon as possible after the work has been completed, or at least at the end of the month. It is good business.

11. Handle complaints sympathetically. Take the attitude first that the customer is always right and proceed from that point. Most complaints are based on misunderstandings that can be dissolved with friendly discussion. And no matter how "riled up" the customer may be, keep your own temper under control.

12. Participate in civic undertakings—the Community Chest, Boy and Girl Scout programs and others of like nature. You will build a reputation of being a good neighbor, and that is good public relations for you.

13. Do not belittle a competitor. Say something good about him if possible; if you cannot do that, make no comment.

14. And do not forget to smile. That is the surest way of saying you are a friendly person.

Quality of work. A final point worth stressing in the formation of good public relations is the quality of your work. A clothing store in Chicago closes its radio programs with the statement, "Our best ads are not written, they are worn." and this principle applies to every business. If your customers are not satisfied with the quality of your work, your entire public relations program will be wasted. Strive to do top-quality work always.

Establishing good public relations is a job that cannot be done in a day or a week; in fact, it is a job that is never completed. It must be worked at constantly. There is only one way to establish good public relations: Follow the golden rule of dealing with others as you would have others deal with you.

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(The FIRST Complete Marking System)

Progressive nurserymen everywhere — faced with the problems of seasonal sales and a shortage of trained help — are installing the Silent Salesman.

This new marking system answers about 90% of all customers questions permitting each salesman to handle many additional people during periods of peak sales.

You, too, can increase your cash and carry business without adding another man.

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Circular 566A tells the story.

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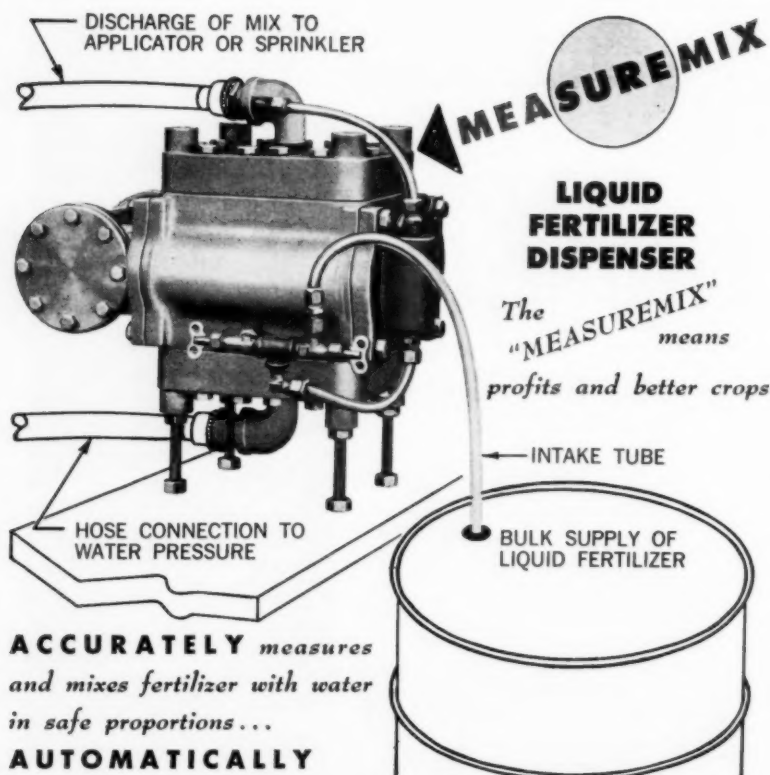
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ACCURATELY measures
and mixes fertilizer with water
in safe proportions...
AUTOMATICALLY

THE SMITH "MEASUREMIX" OFFERS THESE DISTINCT ADVANTAGES

- **IS FULLY AUTOMATIC** • Driven and operated by the action of the flow of water, it does not require expensive power equipment.
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- **PORTABLE** • Can be operated anywhere by one man. Takes the fertilizer straight from the Bulk Tank through a syphon tube. Allows a completely clean operation, without spillage or waste, and is so foolproof, it can be operated by untrained labor. Ideally suited for truck gardeners, flower growers, etc. Model R-3 for $\frac{3}{4}$ " hose connection will handle up to 15 gallons water per minute. Model R-8 for 2" hose will handle up to 100 gallons water per minute.

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Write for **FREE** descriptive literature, prices, instruction sheet, and list of growers using this equipment.

BEGINNING IN THE NURSERY BUSINESS

By John J. Pinney

Articles reprinted from the American Nurseryman. Includes retail salesyards, landscape nurseries, garden centers, mail-order nurseries, agency nurseries, container stock, financing and keeping records. 64 p. (1958).....\$1.00

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Chicago 4, Ill.

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No. 114 Rapid Cut Pruning Saw combines for the first time: Quick cutting. Smooth cutting. Easy operation.

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PLANT PATENTS

The following plant patents were issued recently, according to Rummeler & Snow, Chicago patent attorneys:

No. 1733. Chrysanthemum plant. Sidney B. Hutton, Jr., West Grove, Pa., assignor to the Conard-Pyle Co., West Grove. A new and distinct variety of chrysanthemum plant of the decorative type, characterized particularly as to novelty by its compact and vigorous habit of growth, by its large and well-formed blooms, by the distinctive canary-yellow general color tonality of its open blooms and by its suitability for greenhouse pot forcing in the spring, as well as its outstanding value for garden decoration.

No. 1734. Carnation. Wakeman G. McLellan, Jr., Atherton, Calif., assignor to E. W. McLellan Co., Mount Eden, Calif. Reference is made herein to United States plant patent No. 669, issued January 15, 1946, to William Sim, the description of which is applicable to the newly discovered variety No. 1734, except for color, and which reads as follows: "The new and distinct variety of carnation plant, characterized by its combination of features, including particularly its symmetrical and rapid growth; its great productivity; its long, heavy stems; its bud with large opening and tough calyx; its large (color) flowers of uniformly good quality throughout the season, and the exceptionally good shipping and keeping qualities of its flowers."

No. 1735. Variety of strawberry. Earl V. Goldsmith, deceased, late of Morgan Hill, Calif., by Margaret S. Goldsmith, executrix, San Jose, and Harold E. Thomas, Morgan Hill; said Margaret S. Goldsmith assignor to the Strawberry Institute of California. A new and distinct variety of strawberry plant, characterized by its small size and moderate vigor; by its large, glossy, wedge-shaped fruits, which are produced over a long fruiting season and by its ability to produce a large crop during the first growing year, and by its good carrying quality when shipped to markets out of state.

No. 1736. Variety of strawberry. Earl B. Goldsmith, deceased, late of Morgan Hill, Calif., by Margaret S. Goldsmith, executrix, San Jose, and Harold E. Thomas, Morgan Hill; said Margaret S. Goldsmith assignor to the Strawberry Institute of California. A new and distinct variety of strawberry plant, characterized by its rugged plant, which is tolerant of the virus diseases; by its high production, and by its bright, glossy, round-conic to long-conic fruit that carries well on the market.

No. 1737. Variety of strawberry. Earl B. Goldsmith, deceased, late of Morgan Hill, Calif., by Margaret S. Goldsmith, executrix, San Jose, and Harold E. Thomas, Morgan Hill; said Margaret S. Goldsmith assignor to the Strawberry Institute of California. A new and distinct variety of strawberry plant, characterized by a large, vigorous plant, which bears long, conical, glossy fruit, having excellent shipping and processing qualities; by its capacity to fruit well the first year in cool areas, and by its ability to produce a high yield during a long fruiting season.



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Treefern Totem Poles

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First offered to the plant nursery trade March, 1948.

The most satisfactory plant support ever offered the plant nursery trade.

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Pioneers of Products from Hawaii's Forests
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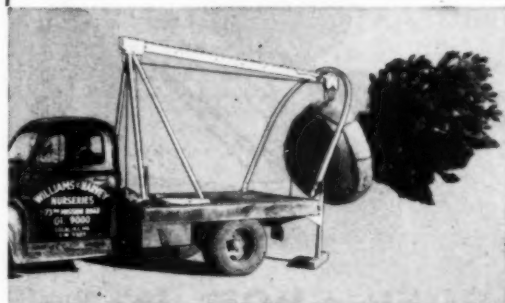
MICHIGAN CONFERENCE

[Continued from page 8]

each plant with its name, type of culture and price cut down sales time and increased sales, it was stated by one member of the group. Another suggestion offered was that sales personnel be trained to ask questions to determine the needs of the customer even if he asks for a particular item. It is often the case that the item requested is not what the person needs at all, and the salesman can suggest the proper plant and possibly several others to go with it. It is important that salespersons be trained to answer questions of the consumer properly or be able to find out the correct answer. This will build confidence in the firm. First-class stock, well grown and well handled is important to the success of the business, along with neatness of the grounds, it was stated. The best advertising effort is to keep all work at a quality level, never allowing second-class work on projects.

Many felt that the word "guarantee" should be stricken from all contracts and in its place a "replacement policy" should be developed. The word "guarantee" implies that the materials sold will grow despite the fact that a customer may take little

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Since Williams & Harvey announced this new, improved big-tree mover four years ago, leading nurseries, tree surgeons and park departments in all sections of the U.S. have adopted it.

- New Lighter Weight
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- Two Sizes, 6 Ft. and 7 Ft.
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- Fits Any Standard Truck

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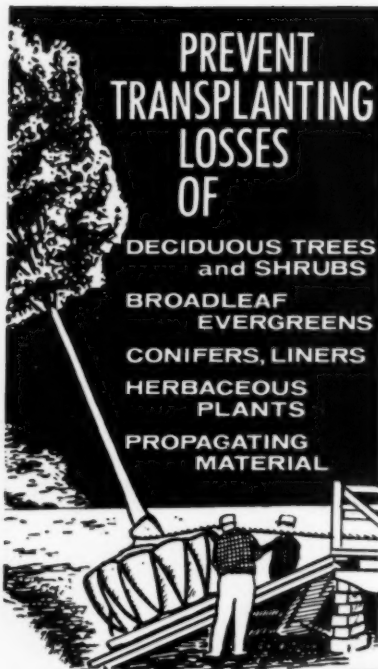
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Forget the Words "LATE PLANTING"
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Virtually all sizes and varieties of plant material . . . from 40-ft. Pin Oaks to small vegetable seedlings . . . have been moved successfully even in hot-est weather when coated with WILT-PRUF!

Live plants pay dividends . . . dead plants profit no one. Keep them alive with Wilt-Pruf.

Wilt-Pruf has many uses . . . any new uses you can think of are worth cash to you. Write for contest details!

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HAND TRUCKS

Especially built for handling
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built in three sizes, with
capacity up to 1500 lbs.

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can easily handle 600-lb.
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**DAYTON FRUIT TREE
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DAYTON, O.

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**FOR OUR PACKING OF
Nursery Burlap
Squares and Rolls**

Write for prices and samples

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or no responsibility for the care of the plants.

The subject of "Small Home Landscapes" was discussed by Prof. Joe Roesch to open the Wednesday morning session, which was under the chairmanship of Dr. Donald P. Watson. Professor Roesch has been with the department of ornamental horticulture of the Long Island Agricultural and Technical Institute for the past 25 years and has developed several concepts that landscape firms can use to advantage, Dr. Watson stated.

Landscape Design

Professor Roesch emphasized the necessity of developing the home landscape through the design approach, rather than from the plant material angle. He illustrated his method with large-scale drawings, explaining the use of elevation and perspective drawings to study the relationship of plant mass to the mass of the building.

A simple method of setting up a perspective drawing was outlined by Professor Roesch, as he developed an entrance treatment for the average home. This type of presentation is an excellent selling tool, he stated, as it aids customers to visualize what a finished planting will look like. However, he cautioned, the problem should be carefully worked out by the designer before presentation, and only one solution should be used, as more than that tends to confuse the client.

In his experience, he explained, there has never been a design that could not be improved by further study. To illustrate his point he re-did the original problem and pointed out ways to make it more desirable. The steps to follow in the design of an entrance area he listed as over-all study of form and mass, consideration of texture and color and, finally, choice of plant materials to fit the requirements.

Line and pattern should be the first consideration in the design of the private area, or outdoor living room, according to Professor Roesch. Strength of line and pattern are necessary to the development of any good design.

Tour Campus

After Professor Roesch's talk, the group assembled at the south entrance of Kellogg Center to board wagons for a tour, arranged by members of the department of horticulture, of new campus developments and the experimental plots. Michigan State University boasts one of the finest collections of evergreen plant materials in the state. Growing

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in a group, the plants afford the nurseryman an excellent chance to study the various types and to choose varieties that will grow well in Michigan.

A deciduous shrub study area was started at the campus maintenance nursery this past spring, with 130 plants; eventually there will be three plants of each species or variety in the collection, which will include over 300 different deciduous plants. All plants will be labeled, so students and others can study the plants and make comparisons.

Michigan State University's horticultural department is one of the leaders in the nation in experimenting with nursery problems. At the present time a dozen or more experiments are being conducted. The effects of humidity on the growth of selected ornamental plants, the anatomical effects of the gibberellins on plant tissues, intergeneric grafting and the fertilizing of taxus were a few of the tests viewed by the group.

While it is too soon to make conclusions, in many cases it has been found in the fertilizing of taxus after the first year that a 12-6-6 or a 12-12-12 inorganic fertilizer, applied at the rate of two to four pounds to 100 square feet, produced the most satisfactory results. Rates over eight pounds to 100 square feet were detrimental to growth, and applications of 0-0-60, 0-20-0 and 33-0-0 at three pounds to 100 square feet made plants subject to winter injury.

Dr. Donald Watson has done some work with bonsai plants, the group was advised. Sixty plants that had been grown in cans were brought to the campus for treatment and observation about one year ago. It is not difficult to dwarf the habit of growth by reducing the root system and the bulk of soil by planting these specimens of Pfitzer juniper, Mugho pine and Scots pine in small, low containers. Some of the branches were removed, and others were wired into artistic shapes. Complete records were compiled of the time spent in handling, training and growing, and then plants as closely matched as possible were offered for sale in three typical nursery outlets. Information as to cost, appeal and production problems will be available at the end of another season.

Herbicide and Fertilizer Tests

Other experiments are being conducted on canned and field-grown nursery stock and weed killers for use in field-grown nursery stock. First-year results indicate that it costs twice as much to grow plants in containers as in the field, but they

BASIC REFERENCE BOOKS

Manual of Cultivated Trees and Shrubs, by Alfred Rehder. Completely revised and enlarged. Description of trees and shrubs. Glossary of botanical terms. Describes more than 2,500 species of trees and shrubs with their varieties, with some cultural notes. 996 p. (1940).....\$12.50

Manual of Cultivated Plants, by L. H. Bailey. Revised edition, greatly expanded and up to date. Means of identification of fruits, grains, grasses, vegetables, greenhouse plants, ornamental shrubs, plants and garden flowers, with explanation of more than 1,000 botanical terms. 1,116 p., 194 illus. (1949) \$18.50

Hortus Second, compiled by L. H. and E. Z. Bailey. Brings Cyclopedic of Horticulture up to date in condensed form. 778 p. (1941)\$13.50

Standard Cyclopedic of Horticulture, by L. H. Bailey. Descriptions, botanical and common names and concise notes on culture and propagation. It contains detailed discussions of more than 40,000 plants, besides general articles. This work has long ranked as the most complete on horticulture in America. 3,680 p. 3-vol. set.....\$52.00

Standardized Plant Names, second edition, prepared by American Joint Committee on Horticultural Nomenclature. Standard authority on plant names. 90,000 scientific and common names. 673 p. (1942).....\$10.50

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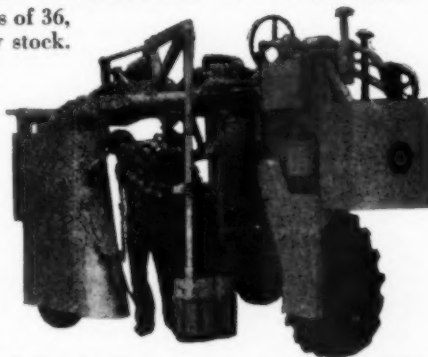
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Legs adjustable in 2-in. settings.
Battery, starter, etc.



Attachments: New one or two-man balling machine, 4 models of sprayers, one or two-row cultivator, new "Jim-DanDe" automatic burlap pinner.

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The next time you haul or burn prunings, remember a Fitchburg Chipper will quickly chip your prunings to eliminate hauling... provide plants and shrubs with a protective moisture cover to guard against summer dry spells, or protect your evergreens from winter drying.

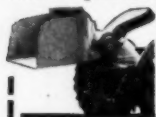
The nursery size Fitchburg Chipper is inexpensive. Yet it converts nursery prunings, waste wood, into a long-lasting, moisture-holding mulch that stays put, won't burn or blow away. It lasts year after year and gradually breaks down into humus.

Model C5 is widely used by orchardists and nurserymen. This model is operated by means of the tractor power take-off. A Fitchburg Chipper gives you "on the spot" convenience on most wheel-type tractors.

The patented spring-activated feed plate, a Fitchburg exclusive, completes the safe, single operator chipping equipment. Each limb is held tightly against a cutting head. With the spring-activated feed plate, you chip brush in various sizes up to its rated capacity with equal effectiveness. There is less shock to the cutting edges, the tough, chrome steel knives stay sharp longer. Chipping goes faster.

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PLEASE SEND facts about Fitchburg Chippers suitable for nurserymen—also prices. We have _____ acres of nursery stock to prune.

We have a _____ Tractor.

Name of Nursery _____

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Town or City _____ State _____

are usually larger when grown in cans. It is clear that container culture has the advantage of giving closer control of growth factors. It may be possible in the future to develop methods of increasing growth sufficiently in containers to overcome the extra cost of production, it was observed by the tour guide.

One of the most promising of the chemical weed killers tested is Simazine, sold under the trade name of Simazine 50W. Weeds have been controlled effectively for the entire growing season without causing injury to the following species when applied at the rate of four pounds of the 50 per cent powder per acre: *Taxus*, *Cotoneaster acutifolia*, *Syringa rothomagensis*, *Platanus occidentalis*, *Prunus Amanogawa*, *Buxus sempervirens*, *Ulmus americana*, *Pinus sylvestris*, *Malus arnoldiana*, *Crataegus occidentalis pauli*, *Pyracantha coccinea*, *Gleditsia triacanthos*, *Acer platanoides*, *berberis* and *Juniperus chinensis pfitzeriana*. Simazine is not now recommended for use on a commercial scale. Further study must be made before final results can be obtained, it was pointed out.

Business meetings were held after lunch for the various groups in attendance, which included the nurserymen, the newly formed Michigan Association of Landscape Architects and the Christmas tree growers.

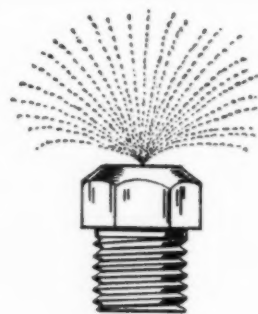
Two bus loads of nurserymen and their wives left on the annual post-convention nursery tour Thursday morning, August 14. A report of this trip appears elsewhere in this issue.

The conference program was prepared under the co-chairmanship of Mrs. Edwin L. Smith, Smith Tree Service, Lansing, and John Emerson, Emerson Landscape Service, East Lansing. Dr. Fred Widmoyer acted as adviser.

Hosts and hostesses of the affair included Mr. and Mrs. Paul Armintrout, Armintrout's Evergreen Nursery, Allegan; Mr. and Mrs. Robert Scovic, Kalamazoo, and Mr. and Mrs. Robert Richter, Richter's Garden, Lansing.

LANDSCAPE GROUP MEETS

The recently formed Michigan Association of Landscape Architects met at East Lansing, Mich., August 13 to discuss issues of interest to the group. Thirty-five members were present as committee reports were given. Of major concern to those in attendance was a report by Prof. Carl Gerlach, department of landscape architecture, Michigan State University, East Lansing, on the



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5 nozzles	\$ 5.50
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Tork 24-hour on/off clock...	10.95
Tork cycling clock, 1-minute or 30-second adjustment...	23.95
Solenoid valve, 3/4-in., full ported	23.00

Also strainers, larger valves and other types of nozzles. Booklet upon request, showing many uses for fog in nursery operations.

Postage prepaid—check with order, please.

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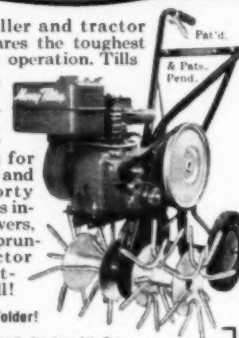
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state bill proposed by the Michigan chapter of the American Society of Landscape Architects. The bill, he reported, is in its final stages, and its passage would give landscape architects a legal standing in the state on a par with that of architects and engineers.

Robert J. Fedoskey, chairman of the membership committee, reported that applications for membership had been received from over 40 persons and more are arriving with each mail. Mrs. Jane Smith, Smith Tree Service, Inc., Lansing, president of the association, listed the objectives of the M. A. L. A. as being the protection of the public welfare, the promotion of the profession, the improvement of the quality of landscape design, co-operation with public agencies whenever the group can be of service and the discussion and solution of common problems.

Other officers of the association include Lawrence Smith, landscape architect, Birmingham; Donald Vander Veen, R. D. Miller Nursery, Lansing, and Kenneth Runciman, landscape architect, Ann Arbor. Serving on the board of directors are Harnd Hampikian, landscape architect, Birmingham; Emerson Brown, landscape architect, Birmingham; M. L. Thomas, city of Lansing; Carl Gerlach, and Cy Boyer, Michigan department of agriculture, honorary member. D. H. V.

VINES AND ESPALIERS

[Continued from page 16]

to this effect, the shreddy, cinnamon-colored bark creates an interesting winter attraction. This vine has a tendency to extend horizontally from the wall on which it is growing, thus giving the effect of depth while occupying only a small area of ground space. The wistarias are well-known subjects, and my only comment is that one should consider the rank growth of this vine and use and maintain it carefully.

Outstanding Flowering Vine

The clematis can be considered as the outstanding flowering vine, with many varieties and hybrids available. It climbs by means of a modified leafstalk, and some form of support is necessary. Some of the most desirable types are the Jackman hybrids; the Ningpo hybrids, such as Nellie Moser (mauve with a red bar), Ramona (blue) and Lady Neville (mauve); pink anemone clematis (rose); Henry clematis (white); scarlet clematis (red tuliplike flowers), and sweet autumn clematis (white). The Jackman, Ningpo, Henry and pink anemone clematises

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plastic lined bags and bulk car and truck loads.

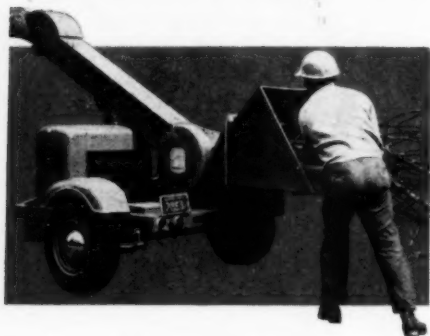
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No wonder Asplundh Chippers are the fastest-selling, most often specified chipper on the market today. The fact that you can chip *more brush faster at less cost* with an Asplundh Chipper has been *proven* by the largest tree company in the world. It is by far the best chipper you can buy.

Write *today* for full details. Better—ask for a prompt demonstration without obligation.

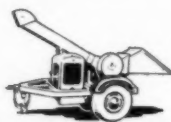
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you can:

- Save 75% of your loading and hauling costs—4 Truckloads of brush equal 1 of chips.
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- Provide income—a ready market exists for chips. Used for mulching, erosion control, walks, etc., and by nurseries, farms and zoos.

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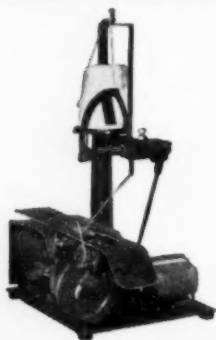
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- Adjusts automatically to any size bunch up to 19 ins. in circumference.
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- Lightning fast. Ties roses, glads, seedlings, cut flowers, as well as any other type nursery stock.
- Uses cotton twines 3 to 24-ply, tapes and braids, fine sisal and jute.
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The S-W Supply Co., P. 22, Grand, Kan.

Cut shows Plant Stake

are large-flowering types. An attractive fall-flowering vine is the silver-lace vine, or fleecflower, which bears interesting billowy white flowers in August and is effective for over a month.

Deciduous vines that are valued primarily for their foliage effect include the types of parthenocissus. The Japanese creeper (Boston ivy) is a common fast-growing type, whereas the Veitch and Low's forms are slower-growing and will not climb so high. The Engelmann form of Virginia creeper is considered to be better than the species. When the rank-growing forms are used on brick or stone building walls, frequent pruning may be necessary to prevent interference with windows or doors.

The 5-leaved akebia is an attractive, slow-growing, twining vine that can be trained easily on a wire or similar support. Two other foliage vines that are effective for heavy covers or screens are Dutchman's-pipe and bower actinidia.

For Fall Color

The outstanding vines with attractive fall foliage are Japanese and Virginia creeper and their varieties. The brilliant red fall color of these vines can be used to good advantage in the landscape. Once established, these types will persist indefinitely.

Evergreen-foliaged plants are a year-round asset in the landscape. Forms of the winter creeper euonymus climb with rootlike holdfasts and are used frequently by designers. Although euonymus is subject to scale, modern pesticides make control relatively easy. In addition to the species, the big-leaved winter creeper is commonly used. The purple-leaved winter creeper presents an interesting purple-green foliage color, and the baby winter creeper is a small, slow-growing form.

Forms of English ivy are also common and popular evergreen vines. However, the use of poor forms often reduces their value. Forms that are hardy and resistant to burning under winter sun and wind should be used. Some recommended clones are Roumanian, Wilson and Thorndale. When obtaining these, one should be sure of his source.

Selecting Espalier Plants

The list of plants that can be used in espalier fashion is virtually unlimited; however, sources of plants trained specifically for this use are almost nonexistent. When selecting subjects for this purpose, one must consider the plant's adaptation to

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training; rate and extent of growth; degree of suckering, and ornamental effects, such as fruit, flower and fall foliage. Finally, one must bear in mind the pattern and textural effect desired. The most satisfactory plants for espalier use are often so-called poor specimens. A plant with a flat side or one that can be pruned readily to this shape is necessary.

The methods of attaching plants to flat surfaces are as numerous as the people doing the work. Screw eyes or hooks of various types may be used easily on wooden surfaces. Concrete nails are satisfactory for light material on stone or brick walls; however, hooks in a type of expansion plug are necessary for heavier plants.

On either surface, wires, cables or wire grids strung between hooks provide the most satisfactory means of attachment. It is easier to train branches in definite patterns with these supports and the whole plant can be pulled away from the wall if wall repairs are necessary. Aluminum, copper or galvanized materials are preferable.

The attachment of the plant branches to the support can be accomplished easily by using cord, nylon string or raffia. Wire should never be used for attaching the plants, because of the danger of girdling. The plant can be trained to a formal, geometric pattern or to an informal, natural design. The method used will depend upon the type of landscape, the effect desired and the growth habit of the plant.

Plants for espalier use should be planted as close to a wall surface as possible. Top and root pruning may be necessary to permit this, especially if a large root is growing on the flat side. An exception to this rule occurs when plants are used against a wooden wall, particularly in areas of high humidity. When this situation exists, the plants should be trained on a structure placed away from the wall, to allow air circulation and prevent rot.

Pruning

The plants should be pruned at the time of transplanting to leave a few branches spaced in the desired fashion and to remove weak, spindly or crossed branches. The rest of the necessary pruning can be done when the plant is attached to the support. Established espalier plants require varied amounts of maintenance, depending on variety. Any improperly pruned or trained type, however, will detract from the planting.

A heavy pruning in late winter is necessary to remove unwanted

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branches or to reduce the length of terminals. On many plants a number of prunings may be necessary during the season. Espalier training requires intensive care, and this fact should be clear to the homeowner to assure satisfaction.

As indicated previously, there are few sources for landscape-size espalier plants. In most cases, they are trained in place in the final planting. It is possible to train these types in growing areas by use of posts, stakes, wire fences or other similar supports. The increasing interest in this type of plant in contemporary landscaping will probably lead to a greater interest in the growing phase of the business.

[In connection with his talk, Prof. Reisch prepared and distributed the list of selected vines that accompany this article.]

FLORIDA FIRM CHANGE

Gordon Palmer recently announced the appointment of Jay L. Blanchard as manager of Palmer Nurseries, Osprey and Sarasota, Fla. One of the largest ornamental plant nurseries on Florida's west coast, the firm has over 100 acres under cultivation. Mr. Blanchard, who succeeds J. H. Popham, Jr., in the managerial position, was previously head of the firm's landscape department. Before joining Palmer Nurseries three years ago, he was assistant manager of Sarasota Jungle Gardens.

He was graduated from Northeast Missouri State Teachers College, Kirksville, with a B. S. degree in education. He received a master's degree in agriculture, specializing in floriculture and ornamental horticulture, from Cornell University and was instructor in horticulture and landscaping at Northeast Missouri Teachers College from 1948 to 1952.

DISCONTINUING operations is the Park Farm & Nursery, Berlin, N. J., formerly operated by the late Luther M. Jennings, and later by his son.

LANDSCAPING of the "Prairie Lady," a model home to be shown at the farm progress show September 24 and 25 at Brookston, Ind., will be done by the Onarga Nursery Co., Onarga, Ill.

INCORPORATED as a Michigan corporation August 1 was the Woodlot Seed Co., Norway, Mich., operated as an individual company since 1936 by C. E. Hulce. It will expand its operations in the sale of shrub and tree seeds.



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